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The ILLINOIS Medical Journal

VOL. 83 NO. 2

February, 1943

In This Issue

Fetal Distress During Labor

✦

Respiratory Disturbances in the Newly-Born Infant

✦

(See page 23 for Table of Contents)

ANNUAL MEETING ILLINOIS STATE MEDICAL SOCIETY
PALMER HOUSE, CHICACO, MAY 18, 19, 20, 1943

OFFICIAL JOURNAL OF THE ILLINOIS STATE MEDICAL SOCIETY

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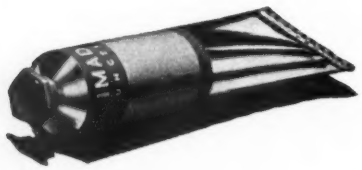

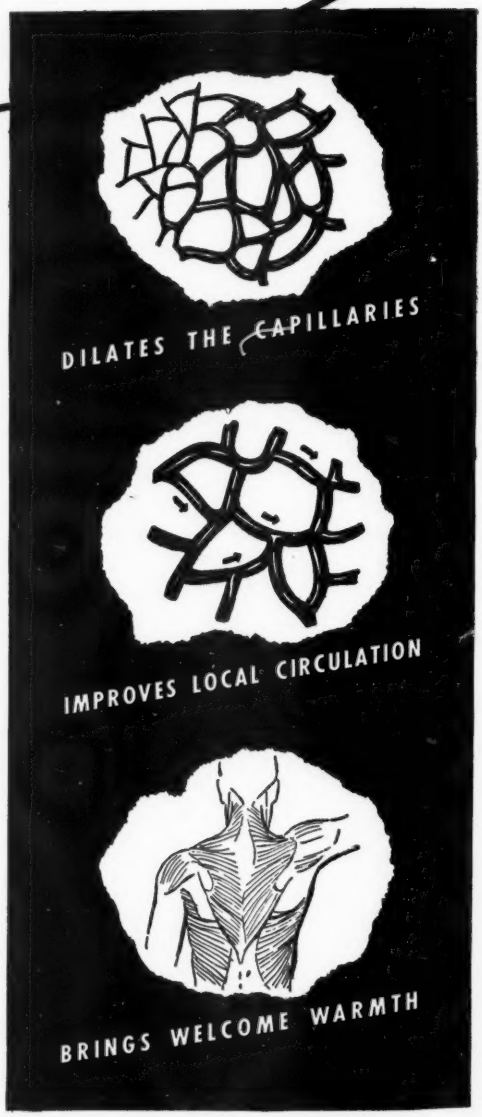

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The Illinois Medical Journal

February, 1943

VOL. 83, NO. 2

Official Journal of the Illinois State Medical Society

EDITOR — Harold M. Camp. EDITORIAL BOARD — James H. Hutton, Chairman, Frederick H. Falls, Josiah J. Moore, Edwin M. Miller, Chauncey C. Maher, Harry S. Gradle, Philip H. Kreuscher, Harry Culver.

Editorials

ILLINOIS MEETS ITS QUOTA

As was suspected by the state committee on Procurement and Assignment Service for Physicians, Illinois was credited in Washington on December 31, 1942 as having slightly exceeded its quota of physicians for the armed forces for the year. Credit is not given the respective states in meeting their quotas for the internes and residents from the state who have been commissioned as medical officers. No credit is given for men in Veterans Administration Facilities, although they hold a reserve commission in most cases. If this credit had been given, Illinois with hundreds of the younger men leaving these positions as internes and residents to enter service, a great showing would have been recorded.

During 1943 from present indications the quota for this state will be greatly reduced and once more it is believed that the established quota will be met without greatly impairing the maintenance of adequate medical care in all parts of the state. The Procurement and Assignment Service is working each day in the effort to aid in the relocation of physicians within the state. It is believed that relocations deemed necessary can be made by shifting physicians from certain communities to others without asking for assistance from other states where there may be more physicians than are actually necessary for civilian service.

At this time a reappraisal is being made of the medical manpower of Illinois by counties and special attention is given to the physical condition of those physicians remaining in civilian practice, to their age and to other pertinent data, so that a better picture may be had of actual conditions.

In some communities younger physicians have been declared available and have been commissioned, leaving the older men for civilian duties. In a few instances soon after the younger men have been commissioned, some of the other men have decided to move to a larger city leaving the community without a resident physician. Attention has been called to the fact that in one of the larger downstate cities no less than 12 physicians from other localities have gone in to practice there within a relatively short time, even though it was generally considered that enough physicians remained for civilian care. This is a situation that Procurement and Assignment cannot prevent, but we all hope that it will be possible for the county committees as well as the medical society officers to do everything reasonable to discourage the relocation of additional physicians in this manner during the present emergency.

Several physicians in Illinois who are exceptionally well qualified and who have always practiced in a large city successfully, have given assurance of their willingness to go to smaller communities to carry on until the former physicians now in service return to their civilian

posts. A few of these men have already moved to certain rural communities and surely are doing their bit to help in the war effort.

Physicians willing to be relocated are requested to write to the State Chairman, Procurement and Assignment Service for Illinois, giving information as to their age, school, date of graduation, and information relative to their present physical condition and the type of work they are especially fitted to do. When this information is received they will be given a list of communities where additional medical personnel is needed and the names of the proper individuals in these communities with whom they should correspond to get additional information.

Relocations can and will be made without using physicians from other states if all Illinois physicians are willing to do their part.

Tuberculosis is the enemy of every American. Our job is to find the enemy and destroy him. Charles E. Lyght, M.D., Journal-Lancet, April, 1942.

DISCRIMINATE USE OF THE SULPHONAMIDES

Present-day sulfonamide therapy is unquestionably one of the greatest achievements of modern medical science. These drugs are now used orally, parenterally, intraabdominally, and locally, in the treatment of many types of conditions. Probably all branches of medicine have seen marked improvements in both mortality and morbidity through the use of these drugs.

In the five-year period from 1937 to 1942, the reduction in deaths from all forms of pneumonia has been 50%. These reductions have been especially in the types of pneumonia of pneumococcal, staphylococcal and streptococcal origin, for in some other types the sulfonamides have little, if any, effect on the progress of the infections. Within the past two years, two unusual opportunities to establish the true value of these drugs have been presented to show what they can do in the treatment of wounds.

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Original articles and membership correspondence to Dr. Harold M. Camp, Monmouth, Ill.

Society proceedings and news items and changes in the mailing list to Managing Editor, 30 N. Michigan Ave., Chicago.

Subscription price of this JOURNAL to persons not members of the Illinois State Medical Society is $3.00 per year, in advance, postage prepaid, for the United States, Cuba, Porto Rico, Philippine Islands, Hawaiian Islands and Mexico. $4.00 per year for all foreign countries included in the postal union. Canada, $3.50. Single current copies, 50 cents.

Many wounded evacuated at Dunkirk were given sulfanilamide while many others did not receive the drug, and the contrast in both mortality and morbidity of these groups was most astounding. The second unusual opportunity was afforded at Pearl Harbor where suppuration was almost absent, and no deaths from gas gangrene, following the local use of sulfanilamide in these wounds. The operative mortality was probably the lowest on record, considering the type of the injuries, and this largely attributed to the use of the sulfonamides and plasma transfusions. Some of these cases did not receive surgical attention until the third day following receipt of injury.

In the five-year period, 1937-42, we know that not only has there been a marked reduction in the deaths from pneumonia in the United States, but a more remarkable reductions in deaths from cerebro-spinal meningitis, which in 1941 caused only 29% as many deaths as in 1937, and scarlet fever, with 16% as many deaths as in 1937. Likewise in many other conditions such as erysipelas, there has been not only a reduction in mortality and morbidity which is astounding, but the formerly much dreaded complications have been almost absent following the use of these drugs.

During the past five or six years, there have been many reports dealing with the subject of toxic manifestations following the use of the sulfonamides and a considerable number of deaths from their use have been reported. Most physicians, who have been using these preparations since their true value has become established, recall a number of patients who do not tolerate them as well as others, and perhaps the reactions have been sufficient to cause a discontinuance of their use in these patients.

On account of their unusual value, it seems quite possible that many have disregarded these minor reactions from the use of sulfonamides, and they have been continued even though causing some undesired toxic manifestations. On account of the ever-increasing value of the preparations in a variety of diseases, some people have resorted to self-medication in using them where there is no reason to believe they can be of service. Among these conditions are the minor upper respiratory tract infections, the "common cold," influenza, and many other similar conditions. Many people have taken the drugs for supposedly minor sinusitis infections where their use in not necessarily of value. Realizing that these drugs are among the greater developments in medicine in recent years, the fact that some people may become so sensitized to them that their use should be limited to actual indications is a factor too often overlooked.

These undesired reactions are principally seen under two categories; The first includes the reactions seen soon after the drug is given. These vary considerably in the degree of the reactions, some mild while others may be markedly severe. Nausea and vomiting frequently occur early in their use, vertigo is a fairly common result and many physicians have warned their patients taking one of these drugs of the possible dangers in driving a car during their administration. It is generally known that industrial workers taking sulfonamides are more likely to receive accidental injuries than the others. Various types of mental disturbances varying from a mild mental lapse to severe psychoses have been seen among those taking the drugs.

The second category consists of those individuals who may become sensitized from primary use of the sulfonamides, that when they are definitely indicated in some severe infection and the drugs are given, the second toxic reactions may be similar to those previously seen. Frequently these reactions are more severe and there is great danger of more serious and perhaps permanent damage to various organic structure. Drug fever is occasionally seen following their use, and this usually is sufficient justification for a discontinuance of the drugs. In some series of cases where primary reactions were noted, and the drug was given later, as many as 75% had the secondary reactions.

Several types of dermatological reactions have been noted, these varying from a mild disturbance to quite a number of cases of severe eruptive disturbances, some even causing death.

Then again, some of the most dreaded toxic effects from the use of the sulfonamides have been upon the blood and the hematopoetic system. Hemolytic anemias have been reported rather frequently in the literature with some deaths especially when the drug was not discontinued in time. Agranulocytosis is one of the most feared toxic results seen, and usually

this appears only after the drug has been taken over a period of from 12 to 25 days. The length of time the drug has been taken seems to be a highly important factor in this complication, perhaps more than the total amount which has been given.

Several other types of anemias have been reported following the use of the sulfonamides. It is highly important that the physician know which drugs should be used in the many conditions where they are indicated, as well as the ones most frequently resulting in the several undesired toxic reactions. Several conditions referable to the urinary tract have been reported rather frequently such as hematuria, and the development of renal calculi.

Medical literature within a relatively short time has reported more than 200 deaths from sulfonamides, and it is quite probable that this does not represent nearly all of the deaths which may have been attributed to their use. Manufacturers and distriubutors of these drugs have reported the sale of approximately one million pounds of the sulfonamides during 1941, so when consideration is given to the vast amount actually used, perhaps we should not be unduly alarmed at the number of reported toxic reactions.

Every physician before administering sulfonamides should endeavor to ascertain whether or not the patient has previously taken one of the drugs in this group, and if there was an undesired reaction through its use. He should know the indications for the drugs, and also the type which is best adapted for the condition being treated. He should know which of these types cause the most reactions, and use them only when there is a definite indication. He should keep in mind the fact that there is frequently a definite drug sensitization, and that when there has been a reaction previously, there is a great likelihood of secondary reactions following their re-administration, which may be more severe than that previously seen.

Concentration of the drug in the blood should be determined following the first 24 hours of treatment when usually larger doses are used. Subsequent determinations should likewise be made.

Complete blood counts should be made to determine the possibility of the development of an anemia, if there is any alteration in the white blood count, and likewise the differential counts to determine any changes therein. Marked leucopenia should be considered definite reason for the prompt discontinuance of the drug. The urinary out-put should be determined daily and perhaps albumin tests made as often, and likewise microscopic examinations to determine the number of white cells which may be found in the specimen.

These valuable drugs should be used when indicated, although their use should be prohibited in the form of self-medication. Members of the medical profession should get all possible information on the proper use of sulfonamides, the type to be used, and definite indications and contraindications for their use. At the present time, it is the general concensus of opinion that sulfadiazene is the safest drug of the group to be administered in most cases, although there are a few exceptions where sulfanilimide or sulfathiazol are the drugs of choice. We should also keep in mind the fact that we may be dealing with a drug sensitization and all possible safeguards should be taken to prevent additional undesired reactions.

WAR TIME CIVILIAN MEDICAL CARE

With approximately four thousand Illinois physicians now enlisted with the armed forces, there is a marked change in the normal proportion of physicians to the civilian population. Many small towns which formerly had a resident physician may be unable to have a replacement for the duration, although every effort will be made to see that physicians nearby will adequately care for these people until their own physician returns home after the war.

The Procurement and Assignment Service for Physicians, now under the War Manpower Commission, will endeavor in every way possible to aid in the relocation of physicians to those communities actually unable to provide for themselves satisfactory medical attention. At this time quite a number of replacements have been made throughout Illinois, and each day appeals go out to a number of physicians willing to be relocated, to investigate a number of places where

appraisals show actual need of additional medical personnel.

Unfortunately there have been a number of physcians in recent months leave a smaller community where they had been located and go to a larger city where the number of medical men has been judged ample to care for all civilian needs. It is not the larger cities which need more physicians, with perhaps a very few exceptions where ordnance plants, or expanding industrial organizations have taken thousands of laborers and their families into those areas.

The Procurement and Assignment Service has devoted much time in recent weeks to the consideration of various plans to improve medical adequacy in all parts of the country. These considerations take place both at the national and state levels. Within a short time Illinois will have a committee on civilian medical needs to consider the needs of all parts of the state along the line of medical care. This group will endeavor in every way possible to aid in the relocation of physicians from places having more than are actually needed, to those communities where additional services are necessary. In addition to the medical members, it is proposed to have representatives of Dentistry, Public Health, Agriculture, Labor and Industry, so that all types of our citizenry will be represented and different groups will be able to aid in the reappraisals to be undertaken soon at the county level.

The County Committees on Procurement and Assignment will have an important part in these studies, and likewise will be asked to aid in the procuring of a better type of cooperation between physicians and patients, so that none will actually be denied a decent type of medical care during the war. It is quite obvious with nearly one-third of Illinois physicians in service, and more needed each month during 1943, the actual type of medical care previously available may not be had during the present emergency. This is true with the other necessities of life, many of which are being rationed now, and many more will be rationed in the near future.

Physicians will be asked to care for all needing medical care under some plan to be developed locally. The patients will be asked to use discretion in calling physicians, and eliminate unnecessary calls, especially calls at night. They will be asked not to call a physician at night when the call could have been made the previous day. More patients should be able to see the physician in his office, reserving house calls largely as a matter of necessity.

Reports have been received recently of actions which have been taken in a number of Illinois counties where physicians in turn have been selected to care for those people unable to pay for services, and where no provision has been made for their care through public funds. Likewise in some communities, physicians are selected in turn to make night calls, to give much needed rest to other physicians.

Within a short time, the Illinois Committee on Procurement and Assignment will send a bulletin to all county committees, and to the county medical societies giving information which is being prepared at this time by the Governing Board of Procurement and Assignment to give more information on these subjects.

It is the present opinion of the Council of the Illinois State Medical Society as well as the State Committee on Procurement and Assignment that we have enough physicians remaining in Illinois, if properly located, to give the best type of medical care that can be expected under present conditions, and that it will not be necessary to bring in physicians from other states to practice in Illinois during the war.

With a better type of cooperation between physicians and patients, and with the proper exercising of judgment by both groups, it seems quite likely that a more desirable type of understanding can be created which will react to the advantage of all concerned.

We must keep well in mind that tuberculosis is a poor man's disease. It kills seven times as many per hundred thousand among unskilled workers as among the higher paid individuals. It strikes those least prepared to take the blow. That fact in itself is sufficient to make it imperative that the cost come out of the sources other than the victims' meager income. If we expect to finance the war (against tuberculosis) out of the pockets of those found to be suffering from the disease we may as well hoist the white flag. The war cannot be won that way. The public health is the public trust and responsibility and doubly so when the danger comes from a communicable disease. Matthew Woll, Penna's. Health., February 1942.

The following resolution was adopted by the Council of the Illinois State Medical Society at its regular meeting held in Chicago on January 17, 1943, and is hereby published in the February issue of the Illinois Medical Journal as was ordered by the Council.

Edwin S. Hamilton, M.D.
Chairman of Council
Ill. State Med. Society

A RESOLUTION

Whereas the Lord has seen fit to call Mrs. Doris Camp, the beloved wife of our esteemed Secretary, on January 2, 1943, and Whereas Mrs. Camp was a person loved and admired by the members of this Council who came into frequent contact with her, one who always had a kind word and a smile for every one in spite of a long continued disabling illness, and Whereas her character was such that in spite of the frequent absences of her husband, she was always cooperative and an incentive to Dr. Camp in his capacity as Secretary and Editor, Therefore be it Resolved that the Council of the Illinois State Medical Society extend to Dr. Camp its deepest sympathy, and be it further Resolved that her passing will leave an unreplaceable vacancy in the hearts of all of us, and be it further Resolved that a copy of this resolution be sent to Dr. Camp and also be published in the Illinois Medical Journal.

COMMITTEE CHAIRMEN FOR ANNUAL MEETING

Robert S. Berghoff, Chairman of Arrangements for the 103rd Annual Meeting of the Illinois State Medical Society, Palmer House, Chicago, May 18, 19, 20 announces the following have consented to serve as Chairmen of the local Committees:

Executive Committee
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Oscar J. Hawkinson
James H. Hutton
Fred Muller
James P. Simonds
George W. Post

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Pliny R. Blodgett

Publicity
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Registration and Information
S. D. Zaph

Alumni & Fraternity Luncheons
John H. Wolfer

Golf
Robert Cummings

Finance
John S. Nagel

Scientific Exhibits
H. Close Hesseltine

Ladies Entertainment

Pathology
J. J. Moore

Section on Surgery
Raymond W. McNealy

Obstetrics & Gynecology
Herbert Schmitz

Eye Ear Nose & Throat
Vernon M. Leech

The discovery of a primary infection in a child should not condemn it to a life of chronic invalidism, but should lead to the examination of its contacts with the expectation of the discovery of a source of infection, the successful handling of which will protect the child from any consequences of its infection, and possibly save the life and health of many other persons. G. A. M. Hall, M.D., British Jour. of Tuber., July-Oct. 1941.

PAPERS FOR THE 1943 ANNUAL MEETING

The Illinois State Medical Society is planning to hold the 1943 annual meeting scheduled for Chicago, on May 18, 19, 20 at the Palmer House. At a recent meeting this matter was thoroughly discussed by the Council, then later by the Committee on Scientific Work and plans are now being made for an outstanding program which it is hoped will be of general interest to all physicians. The 1943 meeting will be considered a war meeting, and efforts will be made to feature the role of medicine in war time and also extend invitations to the many medical officers in the Army and Naval forces stationed in Illinois to attend the meeting and participate in the discussions.

There will be more general sessions scheduled than usual, with all of the scientific sections participating, but provisions will be made for individual sections to conduct their own technical sessions during the meeting.

Members of this Society who desire to present papers before any of the sections are requested to write to the officers of the proper section giving the information, and including the title of the paper, and a short synopsis or abstract so that the officers will be better enabled to determine whether or not the paper will fit in with the program scheme, and also keeping in mind the fact that with so many general sessions, there will be less time than usual available for technical subjects.

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.....6 N. Michigan Blvd., Chicago, Ill.
George B. Stericker, Secretary.....
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.....4753 Broadway, Chicago, Ill.
C. J. Heiberger, Secretary.....
.....Peoria, Ill.

NOTE: The Section on Pediatrics and the Section on Obstetrics and Gynecology are required to divide the time equally during the meeting, and cannot meet simultaneously unless in joint session.

Physicians interested in presenting papers at the 1943 meeting should write to the above named officers.

In spite of the apparent shift of the peak of mortality toward the older age groups, tuberculosis is still second in importance as a cause of death among men 20 to 34 years of age, while the highest incidence of morbidity from tuberculosis is still in the age group 15 to 29. In most cases in which tuberculosis is diagnosed at a late age, it could have been diagnosed earlier had the patients been examined at, or about, the age of 30. R. E. Plunkett, M. D., War Medicine, Sept.-Oct., 1941.

Due to aid extended to families in which tuberculosis is a problem, it is not at all impossible that the general expenditure for tuberculosis outside the sanatorium may be equal to, or exceed, the expenditure for tuberculosis within the sanatorium. L. M. Morse, M.D., Wisconsin Med. Jour., March, 1941.

Correspondence

NATIONAL NURSING COUNCIL FOR WAR SERVICE

The National Nursing Council for War Service is one of three separate but closely coordinated units primarily concerned with nursing in the war effort. The other two are: The Subcommittee on Nursing of the Health and Medical Committee of the Office of Defense Health and Welfare Services, whose chief functions are the education, procurement and distribution of nurses in this emergency; The American Red Cross Nursing Service, which serves as the recruiting agent of nurses for the military services.

These three units, The Subcommittee on Nursing, The Nursing Council and The American Red Cross, are closely related to each other having interlocking memberships. Nurses on leave from their civilian positions are serving as consultants to the various federal health and welfare agencies. Therefore, one nurse serves as consultant to the Health and Medical Committee of the Office of Defense Health and Welfare Services; another has been appointed to the Medical Division of the Office of Civilian Defense; several others are serving as consultants to the U. S. Public Health Service in its administration of federal funds for nursing education.

"The National Nursing Council for War Service was created to co-ordinate and utilize to the best possible advantage all of the organizational and other resources of the profession and to present a united nursing front to the world."[1] In order to function in the most effective way, the National Nursing Council for War Service, has been organized into smaller groups on a state and local level. Thus every state has a nursing council and local councils are being formed rapidly. In many state and local areas, a nurse representative of the state and local nursing council for war service, sits also on the state and local defense councils organized to protect the civilian population in case of disaster.

Through the cooperation of the United States Public Health Service each state is making an up-to-date registration of professional nurses ready to serve in case of emergency. These lists will be available to both the local nursing council and to the local Office of Civilian Defense.

The Illinois State Nursing Council of the Illinois State Nurses Association functions as the connecting link between the eleven local nursing councils in Illinois and the National Nursing Council for War Service. It serves as a clearing house for all activities having to do with nursing within the State. Therefore, it is closely related to the Nurse Division of the Illinois State Department of Registration and Education, The Nurse Division of the Illinois Department of Public Health and with such organizations as the Illinois Hospital Association and the Illinois State Medical Association.

This year the Council has a program of major significance. It has to do mainly with the balance of nursing service: one, supplying the military forces with a sufficient number of nurses

[1] Professional Nursing, The Nursing Information Bureau, 1790 Broadway, New York, New York.

for the care of wounded and ill soldiers and sailors; two, with meeting the health needs of the civilian population. This maintenance of the balance of nursing service depends wholly upon the results of supply and distribution.

The supply of nursing service must be met by:

1. The enrollment of a larger number of students in schools of nursing —

55,000 for 1942-43 and

65,000 for 1943-44

2. Finding the hidden or inactive nurse and qualifying her for service through refresher courses.

3. Promoting the use of auxiliary workers to the limit by a careful analysis of the duties they can perform safely, and assigning them in relation to the abilities of the workers.

The adequate distribution of nursing service entails the location, preparation and utilization of all the nurse power of the nation. It means a cooperative task on the part of the medical and nursing professions and the public. The result should be "to get every nurse into the place where she is most needed and where her particular abilities are used to the fullest. Such redistribution should first of all eliminate duplication of nursing services, luxury nursing and employment of nurses in non-nursing positions."[2]

The President of the Illinois State Medical Society or his representative is a member of the Illinois State Nursing Council for War Service. We believe the cooperation of this organization in the objectives of the council will have tremendous influence in the execution of its three-fold program.

Mrs. Ada R. Crocker, Chairman
State Nursing Council for
War Service

STATE LABORATORY AT GALESBURG CLOSED

Because of the closing January 30th of the Galesburg Branch Laboratory of the Illinois Department of Public Health, physicians in the Galesburg area who wish to make use of State laboratory facilities for the examination of various specimens are asked to send the material either to the Department's Main Laboratory at 126 North Fifth Street, Springfield, or to the Department's Branch Laboratory at 1800 W. Fillmore Street, Chicago.

Under present State health budget limitations the Department is unable to offer salaries adequate to recruit civilian bacteriologists qualified to fill highly responsible supervisory positions. Personnel of this calibre can today command higher salaries in commercial laboratories than the existing State health budget would allow.

The State bacteriologist formerly in charge at Galesburg, Mr. Calvin Corey, entered military service on January 14 and has not been replaced.

VETERANS ADMINISTRATION

Hines, Illinois
January 4, 1943

Illinois State Medical Society
Gentlemen:-

You undoubtedly appreciate the difficulties confronting Federal agencies with respect to securing qualified professional personnel to fill vacancies caused by persons entering service with the armed forces and new positions caused by the increase in work.

The Veterans' Administration is, at the present time, desirous of securing the services of physicians to fill the positions of Rating Specialists, Medical. This work involves the consideration of disability and death claims arising from the present war and prior wars. Rating Boards have three members; a physician, a lawyer and a layman. Our Central Office in Washington and field offices have at least one of these boards in operation and here at Hines we have four. The work requires no travel and due to its sedentary nature, persons with physical handicaps are not barred if otherwise qualified. The requirements are that the applicant be a member in good standing in his profession and have been regularly admitted to practice in one of the States or the District of Columbia. The entrance salary is $3,800.00 per annum, with promotional steps up to $4,600.00 per annum. Under the recent salary increase law there will be approximately a twenty per centum increase over and above the entrance salary.

Yours very truly,
J. P. CULLEN
Adjudication Officer

[2] Priorities for Nurses — National Nursing Council for War Service, Inc., 1790 Broadway, New York City.

RULES GOVERNING AWARD
"The Foundation Prize"
of the
American Association
of
Obstetricians, Gynecologists
And Abdominal Surgeons
Will be Awarded on the Basis of the Following Rules: —

(1) "The award which shall be known as 'The Foundation Prize' shall consist of $150.00."

(2) "Eligible contestants shall include only (a) interns, residents, or graduate students in Obstetrics, Gynecology or Abdominal Surgery, and (b) physicians (with an M.D. degree) who are actively practicing or teaching Obstetrics, Gynecology or Abdominal surgery."

(3) "Manuscripts must be presented under a nom-de-plume, which shall in no way indicate the author's identity, to the Secretary of the Association together with a sealed envelope bearing the nom-de-plume and containing a card showing the name and address of the contestant."

(4) "Manuscripts must be limited to 5000 words, and must be typewritten in double-spacing on one side of the sheet. Ample margins should be provided. Illustrations should be limited to such as are required for a clear exposition of the thesis."

(5) "The successful thesis shall become the property of the Association, but this provision shall in no way interfere with publication of the communication in the Journal of the Author's choice. Unsuccessful contributions will be returned promptly to their authors."

(6) "Three copies of all manuscripts and illustrations entered in a given year must be in the hands of the Secretary before June 1st."

(7) "The award will be made at the Annual Meetings of the Association, at which time the successful contestant must appear in person to present his contribution as a part of the regular scientific program, in conformity with the rules of the Association. The successful contestant must meet all expenses incident to this presentation."

(8) "The President of the Association shall annually appoint a Committee on Award, which, under its own regulations shall determine the successful contestant and shall inform the Secretary of his name and address at least two weeks before the annual meeting."

Jas. R. Bloss, M.D.
Secretary.
418 Eleventh Street,
Huntington, W. Va.

WOMAN'S AUXILIARY ACTIVITIES

The Woman's Auxiliary to the Will-Grundy County Medical Society reports a very interesting program. They have a War Bond and Defense Stamp committee which assists the local War Service Committee. They also pledged a sum of money equivalent to a dollar a member towards the Red Cross Kit Bag Fund. They also assisted in the making of kit bags and surgical dressings for the Red Cross.

In February they plan to entertain at a dinner dance a group of Coast Guards stationed nearby. The chairman is a member of the local U.S.O.

Such a program speaks well for the Woman's Auxiliary to the Will-Grundy County Medical Society and certainly identifies it with other working groups. Mrs. D. W. Killinger is president of the Auxiliary.

Mrs. W. C. Bornemeier State Hygeia Chairman reports that Hygeia is having an important place in the War Program this year. There are so many authentic articles on nutrition that meet the needs of all; also articles on guides to health that are of vital interest.

"In a survey made through unorganized Counties we found a need for many more subscriptions to Hygeia than we were able to provide, but," says Mrs. Bornemeier, "through the generosity of a member of the State Auxiliary we were able to send to all who requested it."

The Bureau County Medical Society Woman's Auxiliary entertained our State President, Mrs. W. J. Wanninger of Chicago. Mrs. Wanninger spoke on "What The Medical Auxiliary Can Do in Civilian Defense." She stressed the sale of Defense stamps and Bonds.

A Silver Tea was held at the home of Mrs. R. E. Miltenberger at Spring Valley for the

purchase of books to be sent to military camps.

The Woman's Auxiliary to the St. Clair County Medical Society had a tea at the home of Mrs. J. C. Soucy, 31 Oak Knoll to honor Mrs. W. J. Wanninger, State President. A book review was given by Mrs. Rex Evans of Maplewood, Mo. Assisting Mrs. Soucy were Mrs. Robinson Bosworth, Mrs. W. J. Crotty, Mrs. R. B. Ellis, Mrs. I. L. Foulon, Mrs. W. A. Griffith, Mrs. W. L. Hanson, Mrs. Royal Tharp and Mrs. E. C. Spitze.

Woman's Auxiliary to the Sangamon County Medical Society entertained Mrs. W. J. Wanninger at a recent meeting. Preceding the meeting the members did Red Cross work. Mrs. K. D. Kohlstedt, chairman, urged all members to help. Mrs. D. M. Sirca is president.

The Woman's Auxiliary to the Livingston County Medical Society had a dinner and meeting at the home of Mrs. A. J. McGee in Dwight. Mrs. Kendall assisted. The evening was spent in making sponges and dressings for Livingston County sanitorium.

The Woman's Auxiliary to the Chicago Medical Society meets the first Wednesday of each month in the Medinah Club. Luncheon at 12:30. Mrs. Arthur I. Edison, President, extends a cordial invitation to all visiting or out-of-town members to attend the luncheon and meetings.

Mrs. J. E. McGuiggan
Pub. Chairman

PUBLIC FORUM PLANNED ON CHICAGO'S CANCER PROBLEMS

Dr. Bowman C. Crowell, Associate Director of the American College of Surgeons, announces plans for the holding of a Public Forum on Chicago's Cancer Problems, under the auspices of the Chicago Cancer Committee, Inc., at the John B. Murphy Memorial Auditorium, 50 East Erie Street, on Tuesday evening, February 16. Dr. Crowell is chairman of the committee in charge of arrangements and will act as moderator.

The program as tentatively announced will include the following speakers and subjects:

Ludvig Hektoen, M. D., Chairman, Chicago Cancer Committee, Inc.

"The Program of the Chicago Cancer Committee"

J. P. Simonds, M. D., Chairman, Cancer Committee, Chicago Medical Society

"Hospital Facilities for Care of Cancer Cases and Instruction on Cancer to Medical Students — Report of New Survey"

Herman N. Bundesen, M. D., President, Chicago Department of Health

"Cancer Mortality Statistics in Chicago and the Nation"

Rollo K. Packard, M. D., President, Chicago Hospital Council

"Relation of the Chicago Hospital Council to the Cancer Problem"

Miss M. E. Westphal, Director, Visiting Nurse Association of Chicago

"Home Care of Cancer Cases"

Alexander Brunschwig, M. D., Member Cancer Committee, Chicago Medical Society

"Cancer Research in Chicago"

Mrs. Arthur I. Edison, State Commander, Women's Field Army, American Society for the Control of Cancer

"Local Program of the Women's Field Army"

Raymond V. Brokaw, M. D., Director, Division of Cancer Control, Illinois State Department of Health

Topic to be announced later

A period for questions and answers pertaining to subjects that have been presented will be provided following the discussions.

RARE CHEMICAL EMPLOYEES ADOPT WAR BOND SAVINGS PLAN

Employees of Rare Chemicals have enthusiastically responded to the suggestion of General Manager E. T. Fritzsching that they aid the war effort by purchasing War Bonds on a voluntary payroll deduction plan instituted by that company.

To date, 91.7% of the employees have authorized the management to deduct a certain portion of their wages and salaries each payday to enable the government to purchase more guns, tanks and ships.

Adam Paul Piret, Sales Promotion Manager and Chauncey Olmstead, Chief Engineer, head Rare's War Bond Committee. Purchase and distribution of War Bonds will be made by Arthur F. Harden, Assistant Secretary.

Medical Economics

Edited by R. K. Packard, M.D., Chairman of the Committee on Medical Economics of the Illinois State Medical Society, 826 East 61st Street, Chicago, Illinois.

The Ruml Plan for Pay As You Go Income Tax is now being considered by Congress and the Treasury Department.

This is important to physicians in the service, especially those who joined in 1942, and equally important to all others who joined during that period, and who had a fairly high income for 1942. The plan at present proposes *to eliminate the payment of 1942 taxes with the* exception of the first payment due March 15, 1943. It then, proposes to establish a pay as *you go income tax bill for 1943. Many physi*cians and others would benefit from this program and it would not embarrass the Treasury Department as far as income for 1943 is concerned.

Many men in the service would encounter some hardships in meeting the total 1942 income tax payment while in the service. It is undoubtedly true that many people make little or no provision for their taxes during the taxable year, but depend upon the following year to meet the taxes of the preceding year. This will be more true of several million people who under the old law will be subject to their first income tax payment.

Another factor favoring the pay as you go plan is the possibility that following the war, which a great many think will be concluded in 1943, incomes will decrease, and with the decreased incomes many will not be able to pay their tax out of earnings of the following year.

Higher taxes are justified at the present time to meet the budget and to prevent inflation. It is estimated that the American people will nave fifteen billion dollars, in income during 1943, more than there will be goods to purchase, and with this amount of money increasing prices will develop in spite of their attempt to establish price ceilings.

The argument that people will or should save that fifteen billion dollars for future needs in the post-war period is plausible, but not practical because it is evident today as it has been in the past, during periods of prosperity, that the majority of the people are inclined to spend the major portion of their income. Perhaps a nation campaign on frugality both for the government and the people might be advisable. It is evident that we soon forget out depressions and make little effort to provide for them during periods of prosperity. Most large businesses do this, but strangely enough not even all of them.

It must be conceded that unless management in general had set-up vast reserves previous to the depression, which they could use during the depression, thus enabling them to continue operation at an operating loss, that we could not have moved into our gigantic war production as we did because plants and tools, etc., would have to keep them going. Unemployment would have become obsolete without these necessary reserves been much more serious than it was.

It seems sound to pay as much as we can as we go and to resolve that as soon as the emergency is over to devote our time and effort to the reduction of national expense — thus relieving our people of such high taxes that it virtually makes them economic slaves of a Centralized and Bureaucratic Government.

R. K. Packard,
Chairman
Committee on Medical Economics.

Medicine's Role in the War Effort

NEW PLANS FOR MEDICAL EDUCATION

Specialized Training Program of the Army and Navy

The armed forces have need of the services of men with specialized training. They will utilize available facilities of certain American colleges to institute the training. Those receiving the training will be on active duty in uniform receiving pay and general military discipline. Arrangements will be made with various selected institutions for housing and messing facilities as well as for the actual training.

The plan here described has resulted from conferences between the Army, Navy, War Manpower Commission, and American Council on Education. The plan will be undertaken by the first three of these through a joint committee, with the final decisions in controversial matters being settled by the War Manpower Commission. Although it has been stated that the Army and Navy plans are similar, all data available at present indicate that there is considerable variation in the two programs.

THE ARMY

Selection will be governed by standards used for officers' candidate schools and some additional standards of the American Council on Education. Selection will be made from enlisted men who have completed or are completing basic military training and, except for some of the advanced courses, are under 22 years of age.

There are also eight special groups the members of which will be given training under this plan, including the following:

1. Medical students in the enlisted reserve, who will be called to active duty and detailed to continue instruction.

2. Medical students commissioned in the Medical Administrative Corps who may resign commissions and enlist as privates, to be detailed in the same manner as medical students in the enlisted reserve.

3. Premedical students in the enlisted reserve corps, who will continue on inactive status until the first semester of 1943 and will then be detailed as above.

4. Medical and premedical students not in the enlisted reserve who are taking approved courses, who will be inducted in Selective Service before the first semester of 1943, will be placed on inactive duty for a semester and then detailed for further training as above.

Colleges will be selected on the basis of standards, equipment, adequacy of housing and messing facilities, and minimum Army overhead. The standard of adequate proficiency is to be determined by the Army and the American Council on Education. Initial tests to predetermine the suitability of selectees will be evolved. Standard curriculums will be set by the Army and the American Council on Education. Military training will be given to these students during these courses of instruction under a cadet system. The plan will go into effect in February 1943 under the Commanding General of the Service of Supplies.

THE NAVY

Selection will be made of those having potential officer qualifications. Selections will be from high school graduates or the equivalent, from the seventeenth to the twentieth birthday, and enrolled or inducted men from the seventeenth to the twenty-third birthday. They will become apprentice seamen or private in the U. S.

Marine Corps on active duty with pay and will be assigned to designated colleges. Some other groups will also enter the training program, including V-1 or V-7 reservists who are undergraduates and qualify as medical, dental and theological students, who will continue on active duty as apprentice seamen under instructions in an accelerated curriculum in approved schools and seminaries until the completion of their professional studies.

Selectees can indicate the preference of their colleges and the branch of the service which they wish to join, including the Marine or the Coast Guard. Adequate arrangements for such students will be provided by the colleges under contract with the Navy, which will designate the number of students for the institution and the cost of maintenance of each student. The plan will be carried out under one naval officer in each institution, who will issue instructions as to discipline and routine. Outlines of curriculums will be released by the Bureau of Navy Personnel. Credits will be allowed for scheduled courses which have already been completed and substitution of courses permitted.

A special required minimum for premedical students is similar to standard premedical requirements of medical schools. If the students are qualified at the termination of their course, they will be commissioned in the appropriate reserve. The Navy has issued special details for the correlation of this program with existing programs and specific directions for those who are now in V-1, V-5 and V-7 reserves, Naval ROTC, or who are probationary commissioned students.

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COORDINATION OF INTERNSHIP WITH THE ACCELERATED MEDICAL PROGRAM

The Surgeon General, U. S. Army, has issued general suggestions and recommendations pertinent to closer cooperation between hospitals approved for internship and the medical colleges under the accelerated medical program. The Surgeon General is loath to recommend that a graduate physician of an approved school be called to active duty with the armed forces prior to completion of a twelve months general rotating internship. It is obvious that if the hospitals approved for internships do not cooperate with the accelerated program it would lose its effectiveness in releasing men for duty with the Medical Corps as soon as anticipated. There is now an urgent need for young, physically qualified medical officers for field troop duty.

Original directives from the War Department indicated that graduates were allowed twelve to eighteen months for completion of essential internships. In many instances interns have interpreted this directive as being authority to utilize the additional time for hospital training before beginning the twelve month rotating internship. This has also allowed hospitals which customarily start their intern classes on or about July 1 of each year to maintain original schedules. It is believed that each hospital should establish a schedule of internships commencing on or about April 1, 1943, available to those who graduate in March 1943 under the accelerated medical program and thereafter as students graduate.

This obviously results in the doubling up of those who have not yet completed their twelve months beginning July 1, 1942, but it is hoped that these interns can be used in approved affiliated internships or in the capacity of subresidents to assist in the orientation of medical school graduates of March 1942. The most recent information available of the interns' situation indicates that there are excessive position vacancies over the supply of available interns.

Unless the situation demands it, the War Department does not desire to shorten the period of internship to less than the twelve months required. However, under the increasing pressure of our military needs it is necessary to expect graduates to be immediately available, if physically qualified, twelve months from the time of their graduation. The War Department does not feel that the eighteen months is necessary for completion of a twelve months internship, and this time will therefore no longer be allowed.

It is hoped that all interns will be trained in the rotating type of internship for the twelve months period; that is, one which provides training in medicine, surgery, pediatrics and their related subspecialties together with experience in laboratory and roentgenologic diagnosis. It is desired that house officers' positions be filled by

those individuals not physically fit for military duty and those who are over age for troop duty. By following this procedure and increasing the duties of house officers and the essential staff membership, it is believed that a greater proportion of each year's intern class will be made available for active military duty.

Attention is invited to the new War Department directive precluding the appointment of senior medical students or interns as medical officers, Army of the United States, until within sixty days of their proposed active duty date. Such students and interns are protected from call to active duty by the War Department by:

1. Selective Service agreement.
2. Medical Administrative Corps commissions.
3. Commissions as Reserve Line officers, which they will receive on graduation from college.

This is accomplished under the authority of the War Department, A. G. O. letter dated May 8, 1942, subject "Commissions for Medical Students," the main purpose of which is to protect the essential medical training program.

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RANK ON INITIAL APPOINTMENT

The Surgeon General of the Army has published from time to time detailed information concerning policies governing the initial appointment of physicians as medical officers, and dentists as dental officers.

FIRST LIEUTENANT ONLY FOR MEN UNDER 38

Because of changes occurring in the military situation and in the civilian requirements, it is contemplated that changes will be required in the standards for the initial grade of appointment of medical officers. It is anticipated that in the near future eligible physicians under the age of 38 years will be appointed in the grade of first lieutenant only and that physicians in the age group 38 to 45 will be appointed in numbers and in the grades for which position vacancies exist.

There is an acute need for medical officers under the age of 38. Applications are being solicited in those localities where physicians may be designated by the Procurement and Assignment Service as available for military service.

Appointments of medical and dental officers by medical officers' recruiting boards have been discontinued; however, the boards now active are to continue soliciting applications. All applications are forwarded to the Surgeon General for final recommendation of appointment.

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EXPANSION OF PROGRAM FOR TRAINING NAVAL MEDICAL OFFICERS

Recommendations on expansion of the program for training naval medical officers in special fields were taken under advisement by Rear Admiral Ross R. McIntire, Surgeon General of the Navy, after a two day conference held December 10-11 at the Bureau of Medicine and Surgery. Submitted by the board of honorary consultants at the conclusion of the meeting, the report proposes:

1. Training of brain surgeons in naval hospitals, under Navy surgeons, with civilian hospitals and teaching personnel being utilized only if limited facilities make this step necessary.

2. Increasing the number of skilled anesthetists, to be achieved in part by training and utilizing medical officers of the Women's Reserve. (The commissioning of sixty women medical officers in the Waves has been authorized, such officers to be assigned to Women's Reserve training schools and stations.

3. Supervision of optometrists by ophthalmologists — naval surgeons whose specialty is the eye.

Training of more medical officers in chest surgery, continued emphasis on physical therapy and the exercise of care in diagnosing neuroses also were urged by the consultants, whose report was drafted by Dr. Frank H. Lahey, Boston, head of the Lahey Clinic and chairman of the Procurement and Assignment Service.

Others attending the conference were Dr. Donald Church Balfour, director, Mayo Foundation, Rochester, Minn.; Dr. George W. Crile, director, Cleveland Clinic Foundation; Dr. Walter E. Dandy, professor of neurosurgery, Johns Hopkins Medical School; Dr. Oswald L. Lowsley, New York, and Dr. Willis B. Morse, Salem, Ore.; Dr. Wilbur A. Sawyer, New York, director, International Health Division, Rockfeller Foundation, and Dr. Meyer Wiener, St. Louis, professor of clinical ophthalmology, Washington University School of Medicine. Dr. George W. Crile was the only member of the board not present, because of illness.

BRITAIN THANKS UNITED STATES DOCTORS FOR THEIR AID

At a luncheon given in honor of the heads of the United States and Canadian army medical services in England at St. Dunstan's, famed British home and training center for the blind, the minister of health, Ernest Brown, expressed Britain's gratitude to those American doctors who generously gave their services to Britain during the early days of the war. He described how a number of American doctors came at their own expense and without remuneration to help in British general and special hospitals in the earliest days of the war, and more arrived after the collapse of France. British medical facilities were open to the United States forces when they began to reach Britain, and it was arranged that any service personnel and other American nationals needing treatment should be accommodated in British emergency hospitals. Five new fully equipped hospitals were given over to the Americans and eight hospitals to the Canadians by the Health Ministry. Mr. Brown said that arrangements have been made at St. Dunstan's for its hospital and training center to care for blinded American soldiers awaiting evacuation, while Americans would treat British casualties across the Atlantic similarly.

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ASCORBIC ACID (VITAMIN C) PLACED UNDER ALLOCATION CONTROL

Ascorbic acid (vitamin C) was placed under allocation control, December 15, through the issuance by the Director General for Operations of General Preference Order M-269. Development of the use of vitamin C in food and medicinal production for the armed forces was the primary cause for the action, as production was formerly geared to meet pharmaceutic needs. The present production does not meet current estimated requirements, and, although production capacity is being increased, demands for 1943 probably will be more than double the 1942 figures. Enough will be available, however, for essential civilian use. Vitamin C is used both by the armed forces and by civilians in the prevention and treatment of scurvy and other deficiency diseases caused by lack of sufficient quantities of this vitamin. The Quartermaster Corps is using large quantities in K and Jungle rations, and there is also a substantial demand for lend lease requirements. Sorbitol, recently placed under allocation control, is one of the principal raw materials needed for the production of vitamin C.

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STUDIES SUPPORT THE RULE TO OMIT DIABETIC PERSONS FROM DRAFT

Studies reveal that the present rule to omit diabetic persons from the Selective Service appears proper, Elliott P. Joslin, M.D., Boston, declares in the Medicine and the War section of *The Journal of the American Medical Association* for January 16.

He says that it is estimated that there are about 800,000 living persons with diabetes in the United States and that one might suppose that among them there would be many who could serve their country as members of the armed forces.

He says "both by arbitrary statistical estimates as well as by computations, based on an actual study and selection from a series of 8,500 persons diagnosed as having diabetes, that in the United States today the number of diabetic persons available for the Army or Navy lies between 4,500 and 1,800 men. With these figures in mind, the diabetic quota useful for military service is relatively so insignificant, the hazards which both the diabetic and the government would undergo if they were inducted are so great and the need for their services in civilian occupations, where they would be less exposed to complications, so apparent, that the present rule to omit them from the draft appears proper."

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AUTHORIZE CORPS OF PHYSICAL THERAPY AIDES AND OF DIETITIANS

The President has signed the bill (H. R. 7633) which authorizes the creation of a corps of physical therapy aides and a corps of dietitians in the Army of the United States. According to the *Army and Navy Journal* the members of these corps will come largely from physical therapists and dietitians now on duty with the medical department on a civil service status. The desire to send these women overseas and to protect their rights as belligerents is responsible, it is said, for the plan to give them military status. In general, military pay, including al-

lowances, will be the same or slightly more than civil service pay. The act authorizes a director of each of these corps with relative rank of major, with other members holding relative rank of captain, first lieutenant and second lieutenant. Pay of members of the corps would be the same as pay of regular army officers without dependents of the fourth, third, second and first pay periods.

★ ★

PAY OF ARMY AND NAVY NURSES INCREASED

The President has signed a bill (H. R. 7633) which increases the pay of army and navy nurses. As far as the act relates to nurses, it accomplishes two objectives: (1) it gives nurses pay of their relative rank and (2) it provides increased relative rank for some nurses. In explanation the *Army and Navy Journal* says that nurses and head nurses have relative rank of second lieutenant and will receive the pay of the first pay period ($1,800), together with allowances. Chief nurses have relative rank of first lieutenant and will receive the pay of the second pay period ($2,000) together with allowances. The new bill gives relative rank of colonel and pay for the sixth pay period ($4,000) to the superintendent of the army nurse corps. All ranks, in addition to base pay, will receive longevity at 5 per cent for each three years of service up to thirty years. A clause in the act protects some nurses who would have lost pay under the new act.

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NEW BRIGADIER GENERALS

Col. Albert W. Kenner of the U. S. Army Medical Corps has been promoted to brigadier general for his highly efficient work in North Africa. This is the officer to whom Brig. Gen. Larry McAfee, the assistant surgeon general, referred in his opening remarks in the first broadcast, December 26, sponsored by the American Medical Association in the present radio program entitled "Doctors at War." Among other things, General McAfee said "I cite with keen pleasure the fact that one of the senior surgeons of the North African task force was promoted to brigadier general in recognition of his highly efficient operation of the medical field service in the face of greatest difficulties." General Kenner was born in Massachusetts in 1889, was awarded a Ph.D. in 1910 and an M.D. in 1915 at George Washington University, and graduated from the Army Medical School in 1917, in which year he was commissioned in the medical corps. He has been awarded the Distinguished Service Cross, the Silver Star and the Purple Heart.

Col. Fred W. Rankin, M.C., President of the American Medical Association, senior consultant in surgery, and Col. Hugh Jackson Morgan, M.C., senior consultant in internal medicine in the office of the Surgeon General, Washington, D. C., have been created temporary brigadier generals.

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AVIATION MEDICAL EXAMINERS

Graduation exercises were held recently at the School of Aviation Medicine in Texas for another class of aviation medical examiners. The didactic portion of this course was conducted in Texas and the practical portion at three army air forces classification centers elsewhere. A list of graduates of this class from Illinois are:

Edmund R. Adler, 1st Lieut., Chicago
George P. Ballard, Capt., Chicago
Arnold Black, 1st Lieut., Chicago
Theodore R. Marquardt, 1st Lieut., Lombard

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THE ARMY FLIGHT SURGEON

The flight surgeon today, as described by Brig. Gen. David N. W. Grant, A. U. S., air surgeon, Army Air Forces, in the *Army and Navy Journal* of January 2, is an integral part of the Army Air Forces; that is, of air research and development, of every combat unit, of every air evacuation unit and of the paratroopers. The flight surgeon plays a major role in the development and maintenance of *esprit de corps* and morale among the personnel of the army air forces. He has developed methods for selecting from the youth of America those whose aptitude for flying is greatest. He preserves and conserves manpower of the air forces at maximum efficiency, through the supervision of a carefully studied and specially constituted application of preventive medicine. He is responsible for the restoration of combat casualties to active health.

General Grant continues: The supercharged high powered motor which enables aircraft to fly at altitudes of 40,000 feet has introduced

the complex problem of anoxia. Above 10,000 feet there is insufficient oxygen for normal physiologic requirements. Above 20,000-25,000 feet life cannot be maintained without the use of accessory oxygen equipment. At 40,000 feet it is impossible for the human being, even when breathing pure oxygen, to live without using pressurized breathing equipment. Thanks to the development of the oxygen mask and regulators, our air combat forces are now operating routinely and safely in the vicinity of 35,000 feet.

Motion sickness, referred to in the air forces as "air sickness," has been a serious problem. The aviation cadet who repeatedly becomes airsick must be eliminated. Air borne troops are unable to fight after parachuting to earth if they are airsick. Prevention and control of airsickness are subjects of extensive research. Selection tests are now being developed so that potentially airsick individuals will not be accepted for training. The use of special ear tests and the correlations of swing sickness with airsickness have revealed valuable facts about the inner ear which may help in the solution of this problem.

The intensity of aircraft motor noise, the loudest known to man, has been a difficult problem. Even the loudest thunder cannot be heard while flying. Noise of this magnitude produces a definite, though limited, impairment in a part of the range of auditory perception. Owing to the shape of the ear and ear canal, it has not been possible to design an ear phone which will satisfactorily exclude motor and propeller noise. The ratio of motor noise intensity to signal intensity has not yet been sufficiently reduced to permit ideal radio communication.

Air evacuation of wounded soldiers from the front lines to large surgical hospitals in the rear is one of the great advances of medical care in this war. The speed and ease of air evacuation establish a higher level of morale among troops. The flight surgeon is therefore charged with many responsibilities. He practices a highly specialized form of applied preventive medicine and assists in the development of equipment to increase the pilot's physiologic performance. He must basically be a good doctor, counselor and friend and, if the personnel under his jurisdiction become sick or wounded in combat, he sees to it that they receive adequate and prompt attention.

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BLOOD PLASMA RESERVES

The Office of Civilian Defense, Washington, D. C., issued Circular Medical Series No. 25 on December 21, which was as follows:

Plasma reserves are now available in every civilian defense region for use in the event of casualties resulting from enemy action or sabotage. The regional medical officer will keep all chiefs of Emergency Medical Service, hospitals and Red Cross disaster relief chairmen informed concerning the amount and distribution of plasma reserves available in the state, and how localities may secure additional supplies in emergencies. In cities where reserves are stored they may be obtained by hospitals through the local chief of Emergency Medical Services. If a community is without plasma or if its supplies are depleted, the local chief of Emergency Medical Service may obtain additional plasma in emergencies from the state chief of Emergency Medical Service. These instructions should not be construed to prevent the use of this plasma for life saving purposes in any disaster. If Office of Civilian Defense plasma is used in non-war related incidents, its use may be considered as a loan, and arrangements may be made later for its replacement.

The Office of Civilian Defense, Washington, D. C., reported on December 29 that civilian reserves of blood plasma large enough to meet the requirements of more than thirty disasters as great as the recent Boston night club fire have been established at strategic locations throughout the country and are being added to constantly under the joint program of the Public Health Service and the Office of Civilian Defense.

As of December 1 there were 50,742 units of prepared plasma in its emergency reserves. Several thousand units have been added during the month, and the full quota of 133,130 units is expected to be reached within a few months. A unit is the amount of plasma obtained from 500 cc. of blood and is sufficient for transfusion. The victims of the Boston fire required about 1,500 such units.

Although the reserves established under the blood plasma program of the Office of Civilian

Defense are intended primarily for the protection of civilian casualties resulting from enemy action, they are available for saving lives in any disasters.

Liquid plasma reserves are maintained in more than a hundred and fifty hospitals which have received grants of federal funds for processing and storing plasma. Each of these hospitals maintains a reserve of at least 1 unit of plasma for each bed in the hospital. These will soon total at least 63,130 units.

In addition, a number of hospitals which did not require grants for equipment are setting up plasma banks which will comprise an additional reserve of about 50,000 units for local authorities in case of emergency.

Frozen plasma has been obtained through the Army and Navy from blood collected by the Red Cross in excess of immediate service requirements. It is stored by the Office of Civilian Defense in refrigeration depots in important hospitals in the area if needed. A quota of 29,500 units of frozen plasma has been obtained for this purpose. Finally, 50,000 units of dried plasma is being stored in centrally located depots. Most of the plasma reserves are concentrated in the areas where enemy air raids are deemed most probable. Deposits are also maintained in inland regions.

In Boston at the time of the night club fire there were on hand in the city almost twice as many units as were required for treatment of victims of that disaster. More than 75 per cent of those hospitalized as the result of the fire required administration of some plasma. The superintendent of the Boston City Hospital estimated that it saved the lives of at least 75 persons who were treated there.

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WAR MEDICINE TO BECOME A MONTHLY

Starting with the January 1943 issue, *War Medicine,* published by the American Medical Association in cooperation with the Division of Medical Sciences of the National Research Council, will become a monthly periodical. Since its inception in January 1941, it has been bimonthly.

AMA HOUSE OF DELEGATES MEETS JUNE 7

The House of Delegates of the American Medical Association will convene in Chicago on June 7, 1943, *The Journal* of the Association reports in its January 2 issue. This meeting will take the place of the ninety-fourth annual session of the Association, originally scheduled to convene in San Francisco in 1943.

On September 26 it was announced that the San Francisco session had been canceled because of the war demands on the time of American physicians, as well as the transportation problems involved. This cancellation is the third time in the history of the Association that such an action has been taken, the other two times in 1861 and 1862, during the Civil War.

The many significant problems confronting the medical profession because of the war, particularly those concerning the provision and distribution of physicians and the provision of medical services for the nation's civilian and military needs, will highlight the problems to be considered by the House of Delegates at its meeting in Chicago next June.

RICE JOINS LEDERLE STAFF

Dr. John L. Rice, 1942 president of the American Public Health Association, and former Commissioner of Health of New York City, has joined the staff of Lederle Laboratories, Inc., as consultant, according to an announcement made by the company. Dr. Rice will advise on developments by the Lederle research organization related to public health, the field in which he is an eminent authority.

Lederle Laboratories was founded in 1906 by another New York City Health Commissioner, Dr. Ernest J. Lederle. It is a leader in fields of sera, vaccines and related medicinal products, used in public immunization programs, and of chemotherapy. Its developments of 1942 included, among others, a vaccine and a serum for treatment of Rocky Mountain spotted fever, Hemostatic Globulin for quick staunching of the bleeding from small wounds, testing sera for typing and grouping human blood, new forms for the wider application of sulfadiazine (originated by Lederle research), an effective treatment for ivy poisoning, and a refined vaccine for treatment of equine encephalomyelitis in humans.

Original Articles

FETAL DISTRESS DURING LABOR

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The human fetus is one of the arch-isolationists of all time. Its barriers have for many years been a protection against aggression, especially scientific aggression. Within the past ten years obstetricians and physiologists have begun an invasion of this fortress of development. But, before we consider some of the newer developments let us evaluate a few of the results of the isolationist policy of the fetus, particularly those facts resulting from a comparison with the less confined, newly born infant.

The Children's Bureau of the United States Department of Labor[1] in their study of infant mortality made the following observations: 1—Infant deaths under one year were cut in half between the years 1915 and 1937. 2—Deaths under one month were reduced by 25 percent during the same period. 3—Infant deaths under one day remained unchanged. 4—The incidence of stillbirths was reduced only 15 percent from 1922 to 1936. There has been a tendency by many to accept these deaths as something inevitable and predestined, yet the fact that several large maternity services have reduced their stillbirths and neonatal deaths by one-third is evidence to the contrary.[2]

In its ultimate analysis asphyxia implies interference with oxygen supply and carbon dioxide removal and thus in the broadest sense may be said to be the actual cause of all deaths. Nevertheless, oxygen want has been found to be primarily responsible for about 25 to 50 percent of all stillbirths. Aside from death we now realize that permanent damage to the central nervous system may result from asphyxia. Although this is not a common occurrence one need not look far for confirmation. The ease with which the accident may happen is well illustrated by the following example. A patient, not in labor, was having an elective cesarean section because of a contracted pelvis. During the procedure certain technical difficulties of anesthesia resulted in maternal respiratory obstruction. Although this condition existed for no more than ten minutes prior to delivery the infant was severely asphyxiated at birth. After active artificial resuscitation for 30 minutes the infant breathed spontaneously but its subsequent course was most unsatisfactory. Hemorrhagic spinal fluid was obtained upon diagnostic lumbar puncture. This undoubtedly was indicative of the characteristic petechial hemorrhages which follow asphyxia inasmuch as delivery was without trauma. Subsequently there were signs of progressive mental deterioration and the child was eventually placed in an institution for the feebleminded. An encephalogram demonstrated the presence of cortical atrophy.

The present consideration of fetal distress will be limited to a discussion of those factors which act primarily by creation of oxygen deficiency. Excluded will be such important factors as developmental defects, trauma of birth, infections

From the Department of Obstetrics and Gynecology, University of Wisconsin Medical School, and the State of Wisconsin General Hospital. Presented before the joint meeting of the Sections on Public Health and Hygiene and Pediatrics, 102nd annual meeting, Illinois State Medical Society, Springfield, May 21, 1942.

and others. Anoxia is a loosely applied term indicating oxygen deficiency of an unspecified degree. The more appropriate term hypoxia describes the condition with greater accuracy. However, our existing classifications have been made using the term anoxia and this discussion will continue this practice. There are four commonly recognized types of anoxia.

1. Anoxic anoxia — this implies a deficiency of oxygen saturation of the blood, usually due to failing or inefficient respiration.

2. Anemic anoxia signifies that the oxygen carrying capacity of the blood is diminished.

3. Stagnant anoxia indicates that there is less than a normal amount of blood circulating.

4. Histotoxic anoxia involves the inability of a given cell to utilize oxygen even though it is present in normal amounts.

Admittedly, we know neither the amount nor the duration of anoxia necessary to produce undesirable sequelae in the human fetus or the newly born. The physiologists are now of the opinion that oxygen requirements of the fetus are relatively small[3] and in experimental animals the fetal survival time under anoxic conditions greatly exceeds that of older animals.[4,5] The situation, as it exists in the human fetus, has not been solved. Nevertheless, these lacunae in our factual knowledge should not encourage us to overlook the dangerous potentialities of oxygen want. A clinical incident illustrating this fact is of interest. A primipara, near term, was hospitalized because of a severe toxemia of the hypertensive cardio-vascular type. One evening this patient developed severe acute pulmonary edema. The fetal heart tones, which had been normal at the onset of this condition, were absent 12 minutes later in spite of almost immediate oxygen therapy. In this instance the anoxia was sufficient to destroy the fetus but not the mother and the stillborn infant was delivered some time later.

The presence of two patients, mother and child, doubles the complexity of this problem in pregnancy. The failure of oxygen supply may occur at any point along the transportation system which includes the mother, placenta and fetus. The first point of failure may be in the mother. The atmosphere which she breathes may be deficient in oxygen, a condition most commonly encountered during the administration of inhalation analgesic or anesthetic agents; more specifically with the improper use of certain agents such as nitrous oxide and ethylene in high concentrations without adequate amounts of oxygen. Obstruction of the respiratory passages is a common cause of difficulty. The relaxation of pharygeal muscles during deep narcosis or anesthesia may cause respiratory obstruction and evidence or snoring or sterterous respiration should be considered as a potential danger signal. Excessive mucus, even though of common occurrence, should not be lightly considered. One of the most common and most dangerous of all obstructions follows the aspiration of vomitus, a hazard not only for the fetus but also for the mother.

Metabolic diseases and increased metabolic activity contribute to anoxia. Hyperthyroidism, diabetes, hyperpyrexia, excessive excitement and activity during labor — notably during the second stage, are typical examples. Anemia, hemorrhage and shock are common etiologic factors of anemic anoxia which are frequently seen. Maternal heart failure, as we shall subsequently consider, may readily produce fetal anoxia. Our knowledge of histotoxic anoxia is as yet limited so further discussion is of little value. Disturbances of uterine and placental circulation may produce oxygen want. We can not in a limited time discuss the physiological significance of blood flow through the uterus and placenta to the fetus. It has been shown[6] that uterine contractions actually enhance fetal circulation. This seems to be another example of the old maxim "a little bit is good but too much is dangerous" for we have repeatedly observed signs of fetal distress in patients in whom the uterine contractions were excessively frequent or prolonged. You are all aware of the fate of the infant in a tetanically contracted uterus whether produced spontaneously or by oxytocics. Abnormalities of the placenta such as a premature separation or placenta previa frequently result in asphyxia or death of the fetus.

All of the factors which have been mentioned lead to anoxic anoxia of the fetus; i. e. incomplete saturation of fetal hemoglobin. Similarly any partial or complete obstruction of the umbilical cord may result in development of anoxic anoxia. It is theoretically possible to have the other types of fetal anoxia. Anemic anoxia occurs in certain blood dyscrasias such as

erythroblastosis, or following rupture of the fetal blood vessels. Stagnant anoxia may be occasionally seen in utero when the infant has congenital heart disease. Any drug causing a marked depression of the fetal circulation and fetal heart rate might result in stagnant anoxia. Finally we come to histotoxic anoxia of which we know little except that certain drugs or agents may act upon the cell so that it is incapable of normal metabolism.

Little has been said about carbon dioxide. We know that asphyxia implies accumulation of carbon dioxide as well as oxygen deficiency. It is unfortunate that our knowledge of carbon dioxide is meager, especially when we recall that the gas is a severe depressant in high concentrations.

We have heard and read much about the effects of analgensic and anesthetic agents on asphyxia. No one can deny their role in the production of asphyxia neonatorum yet it is interesting to note that they are usually only indirectly involved in the producton of fetal asphyxia. These agents may produce fetal distress in three ways. First and foremost they may produce maternal oxygen want either by respiratory obstruction or by the reduction of available oxygen in the atmosphere. Secondly, they may depress the fetal circulation directly yet we have evidence that none of the common drugs and gases, with the possible exception of cyclopropane, are capable of this. Finally, they may produce histotoxic effects.

The diagnosis of fetal asphyxia is not always easy. There are three signs commonly considered. *Excessive fetal movement* has been said to indicate fetal distress — at best this is an elusive if not delusive sign. Our studies suggest that the fetus is usually quite active during early labor but it becomes more quiescent as labor progresses. Furthermore, excessive movements are usually agonal in nature when indicative of fetal distress. The *presence of meconium* is a sign of questionable value and to be worthy of consideration certain conditions must be fulfilled: 1—The membranes, obviously, must be ruptured. 2—The presentation must be cephalic. 3—The meconium must be fresh, and 4—The mother should not have had drugs such as quinine for the induction of labor. At present we do not give serious consideration to either of these two signs provided that fetal heart rate is normal.

The fetus in utero leads what might be called a circulatory existence. If given an intact cardio-vascular system, even in the presence of gross developmental anomalies, the fetus usually survives until extra-uterine life begins. The integrity of the respiratory system seems to be of minor importance for intra-uterine survival while at the moment of birth respiratory functions become vital.

The *rate and rhythm of the fetal heart* give us the most satisfactory and direct clinical method for constant evaluation of the fetus during labor. Because of the sensitivity of the fetal cardiac centers to oxygen want we can use the fetal heart rate as a reasonably reliable indicator of fetal oxygenation.

The normal fetal heart rate is commonly stated as 140 and rates of 120 or 160 have been generally considered to be within the extreme limits of normal. A detailed study of several hundred individuals throughout labor has lead us to modify this statement somewhat. For example; during the past month we have observed one patient in whom the fetal heart rate throughout labor never exceeded 118 beats per minute. A few days later another fetus was studied in whom the rate was never below 165 and averaged about 170 beats per minute. Neither of these infants gave any indication, at birth, of having had fetal asphyxia. These and other studies suggest that most infants in utero have an individual, basic heart rate. It is true that many factors cause temporary changes in that basic rate. Time does not permit a discussion of these at present. However, notable examples include acceleration of the pulse following active fetal movements; acceleration or slowing of the rate may be associated with uterine contractions; arrhythmias may follow pressure — a typical example is pressure on a fontanelle during vaginal examination. One common charateristic of all these changes is the failure of the arrhythmia to persist.

In the adult the first cardiac sign of oxygen want is usually an acceleration of the pulse. If this deficiency persists or increases the point of "oxygen crisis" is reached and reversal takes

place. Reversal is characterized by a marked slowing of the pulse in the adult and it is a common belief that a similar condition exists in the fetus. After many observations we have failed to find conclusive evidence that the fetal heart rate accelerates under conditions of anoxia. The characteristic fetal cardiac response to oxygen deficiency may be: 1—A rather sudden decrease in the rate, usually from 30 to 40 beats per minute, which persists throughout uterine contractions and the subsequent intervals, or 2—a gradual or irregular slowing of the rate over a period of three or four minutes to a level below 100. Bancroft[7] made similar observations in sheep — sudden clamping of the cord resulted in an immediate slowing of the fetal heart rate; however, with the vagi cut a true anoxic slowing of the fetal heart was observed 45 seconds after the cord had been clamped.

Frequently one can be certain of the diagnosis by the therapeutic test of oxygen administration. If the fetal heart rate shows improvement, that is acceleration within five minutes following administration, the diagnosis was probably correct. There are obviously certain types of irreversible anoxia that can not give this response, separation of the placenta and complete occlusion of the cord are two typical examples.

A consideration of treatment must include the problem of prophylaxis. Any complication of pregnancy or labor which may endanger the oxygen supply of the fetus should be corrected. If this is impossible the immediate duty of the obstetrician is to anticipate fetal asphyxia and be prepared to diagnose and treat it. Emesis during delivery is a problem which must be managed properly and quickly. This disagreeable and annoying complication is not only common but also exceedingly dangerous for mother and baby. In case there is any doubt in your minds I suggest that you listen carefully to the fetal heart tones the next time you observe a patient with respiratory obstruction from aspirated vomitus. Immediate removal of all foreign material from the respiratory tract and administration of oxygen are imperative.

Administration of atropine, gr. 1/150, or one of its derivatives, an hour or two before expected delivery may prove to be "good insurance" against the annoying and dangerous complication excessive mucus. This is of added importance when the obstetrician anticipates an operative delivery under general anesthesia.

Active treatment of fetal asphyxia has, in the past, usually consisted of dragging the asphyxiated infant out of the uterus by the heels or with forceps. The depressed centers are further depressed by general anesthesia and trauma. Frequently overlooked is the more subtle and less traumatic method of bringing the oxygen to the infant by the administration of this gas to the mother. Elaborate equipment is unnecessary for such treatment, the minimum being a tank of oxygen, a reducing valve and a rubber tube. The addition of a face mask is helpful. 100 percent oxygen may be given continuously or if inhalation analgesia is being used the oxygen should be administered with the agent and during the interval between contractions as well. Such treatment is exceedingly simple and will relieve a large number of distressed babies.[8]

The success of oxygen therapy may be measured by the improvement of the heart rate. Response is usually rapid but unless notable improvement in the fetal heart rate is present within five to ten minutes one may assume that oxygen administration will be of no value. It is apparent that such a procedure does not increase the hazard for the infant inasmuch as at least five or more minutes usually elapse during the preparations for delivery. If the heart fails to improve exigent delivery is indicated when possible. If the heart improves, labor may be allowed to proceed in a normal manner.

We are, at present, very hesitant in performing any type of operative delivery while the mother and fetus are in acute oxygen want. As a general rule we treat the oxygen want first and then proceed with delivery. Certain qualifications of this statement are necessary — if the existing anoxic state is obviously irreversible there is no justification for unnecessary delay, or if fetal asphyxia is impending or developing at a moment when delivery is about to be completed there should be no delay in completing the delivery.

Occasionally a general anesthesia of the mother may be of great assistance in improving the fetal heart rate, particularly when uterine contractions

have been unusually vigorous. When such a procedure is contemplated the anesthetic agent of choice should be one which permits a high concentration of oxygen such as ether or cyclopropane.

Finally, at the moment of birth an important bit of technic may be of benefit to the baby. Immediately after the head has been born the anesthetist can give the mother oxygen in high concentrations and this procedure should be continued until the cord has ceased pulsating or until the infant has breathed. This is the last effort that we can make to insure the maximum oxygenation of the infant as it begins its extrauterine life.

CONCLUSIONS

Primary oxygen want is responsible for many fetal deaths. In addition anoxia may produce temporary or permanent damage to vital centers within the central nervous system. Temporary anoxic depression of the respiratory center is a factor in the production of neonatal asphyxia.

Fetal asphyxia is best recognized by a sudden or gradual slowing of the fetal heart rate. This sign is of greater diagnostic value than are those of excessive fetal movements or the presence of meconium.

In many instances the anoxia is reversible and can be successfully treated by administration of oxygen to the mother. An improvement of fetal heart rate indicates successful therapy. Other therapeutic measures sometimes indicated include deep anesthesia, administration of atropine and "flushing" the mother with oxygen at the moment of birth.

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RESPIRATORY DISTURBANCES IN THE NEWLY-BORN INFANT

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The respiratory system of the newly-born infant is one of the most delicately balanced mechanisms of the body and is the one whose function is most immediately vital to the maintenance of life. In the other body systems a short space of time may elapse while adjustments are being made to an extrauterine existence and if activity does not begin immediately a period of safety exists which permits a subsequent establishment of function. The lungs, however, have no such allowance, for there are no available oxygen stores in the body, and when placental circulation is interrupted, the lungs must immediately replace the placenta as a source of oxygen.

In the normal infant respiration is initiated within a few seconds after birth, and breathing continues uninterruptedly as long as life lasts. If the infant does not breathe immediately, inhibition is usually due to a pathiologic state induced by disturbances in the intrauterine environment or by the processes of labor. In rare instances it is the result of an abnormality of the fetus itself.

Respiratory abnormalities which occur after breathing has once been normally established are less frequently encountered than is an initial interference with respiratory function. The causes of such disurbances are usually more difficult to determine than are those effective immediately after birth and often an entirely satisfactory explanation cannot be given; even here, however, delayed effects of abnormalities of the intrauterine environment are the most common etiologic agents.

Whether respiration after birth is a continuation of a process initiated during intrauterine life, or whether it is an entirely new activity undertaken for the first time after delivery has been accomplished has not been definitely established. Reasoning from an analogy of the function of other organs one would expect some

From the Department of Obstetrics and Gynecology, the University of Chicago and the Chicago Lying-in Hospital Presented before the joint meeting of the Sections on Public Health and Hygiene and Pediatrics, 102nd annual meeting, Illinois State Medical Society, Springfield, May 21, 1942.

type of respiratory movement to occur while the fetus is still within the uterus. All other organs are carrying on processes similar to those existing after birth; the fetus swallows, the digestive secretions are being produced, peristaltic activity is present in the intestine; the kidneys secrete urine; blood flows in a continuous channel through heart and blood vessels; the brain is immature, but, insofar as the stage of development permits, its action is similar to that existing after birth. It is possible, on the other hand, to argue that the activity of all organs other than the lungs, is purposeful and that respiratory movements would not only be useless while the fetus is in a fluid medium, but that fluid within the alveoli would be actually deleterious following delivery.

An attempt has been made to determine experimentally whether or not respiratory movements occur normally while the fetus is still unborn but as yet no method has been devised which yields conclusive proof. That respiratory movements can and do occur in such animals as the sheep, rabbit and guinea pig has been shown by Barcroft, Snyder and Rosenthal and others. Windle and others question the statement of the experimenters that the conditions under which such movements have been shown to occur are comparable to the normal intrauterine environment. They believe that experimental conditions have sufficiently altered the situation so that a response is obtained which would not occur if all relationships were entirely normal.

It is well known that a human fetus may inhale amniotic fluid before birth, for in many stillborn fetuses and in infants surviving only a short time, varying amounts of debris containing epithelial cells desquamated from the surface of the body into the amniotic fluid are found in the pulmonary alveoli. Such debris is at times entirely absent but is almost invariably found in greatest amounts when death has been caused by anoxia. As a result of these observations, it has long been believed that respiratory movements do not occur normally in utero, but result from a stimulation of the respiratory center in the brain caused by a decrease in oxygen tension. That to and fro movement of fluid within the lungs is definitely not necessary for normal alveolar growth, as has been believed by some investigators, is shown by those cases in which normal growth occurs despite tracheal occlusion or loss of continuity in parts of the bronchial system.

That it is possible for amniotic fluid to enter the lungs of a fetus in utero can be definitely shown; that it is normal for this to occur, and that it is part of the intrauterine activity of every fetus, has not been proven. Consequently it is still impossible to state whether the establishment of respiration is a continuation of intrauterine breathing or whether external stimuli produce it for the first time after birth.

The conditions which may decrease the oxygen available to the fetus while it is still within the uterus and which may be sufficient to cause death of the fetus before delivery, or which may be sublethal and may injure without killing, can be divided into four principal groups: ——those which decrease the oxygen in the maternal blood cells (severe anemia, poisoning which results in the production of methemaglobin, gaseous anesthetics which decrease the available oxygen, especially as in the high concentrations of nitrous oxide); 2—those which decrease the amount of circulating maternal blood (shock, hemorrhage); 3—those which interfere with circulation of maternal blood within the placenta (premature detachment of the placenta, either in its normal location or in association with placenta previa, massive infarction of the placenta) and 4—those which prevent passage of fetal blood through the umbilical cord (prolapse or entanglements of the cord, rupture of a vessel with resultant hematoma of the cord). An additional group includes those rare instances where a fetus becomes exsanguinated as a result of rupture of a fetal blood vessel (usually a vessel leading to the cord when the placental insertion is velementous), or from rupture of fetal vessels produced by laceration of the placenta in a central placenta previa with delivery through the vagina.

If an infant is born with heart beating but with respiration delayed or never established any of the above conditions may be responsible. Oxygen lack produces a progressive injury which is proportionate to the degree and duration of deprivation. If birth occurs, and a new source of oxygen is found in the lungs, injury may be

arrested and in some instances recovery doubtless occurs. If oxygen is not available until irreparable damage has been done, death will follow or permanent cellular injury will exist.

During the process of labor a new group of conditions is brought into play which may cause interference with respiration after birth. All of the causes of primary oxygen deprivation may still function during this interval, but in addition, trauma involving the brain may result in the production of simular abnormalities. Unduly prolonged pressure of the uterine musculature on the fetal head, the passage of the head through a bony pelvis whose size is inadequate or to which the head is insufficiently molded, or the exertion of undue pressure on the head by various operative procedures may all result in hemorrhage into the brain substances, into the cerebral ventricles, or into the extracerebral space. This may be of sufficient extent to cause death immediately, or it may result in an injury to the respiratory center which will inhibit respiration and eventually produce death from asphyxia.

Following birth a third set of factors is brought into play as a causative agent in producing disturbances in respiration, either in the initial establishment of breathing, or in its subsequent maintenance. These involve the physical state of the infant itself and are causes primary in its body, in contrast to those which affect it earlier and are secondary to external influences. They may most easily be divided into those which interfere with the nervous control of respiration, and those which prevent the aspiration of air into the alveoli. The latter may, in turn, be sub-divided into conditions in which air cannot enter because of occlusion of the trachea, bronchi or alveoli, and those in which expansion is prevented by external pressure.

The respiratory center in the brain may be inadequately developed as a result of prematurity or malformation. Prematurity does not ordinarily seem to interfere with the initial establishment of respiration, for fetuses not yet arrived at the stage of viability make spontaneous attempts at respiration, and few of the viable prematures who have not been adversely affected by extrinsic factors fail to breathe immediately after birth. The subsequent disturbances which are commonly observed among premature infants are largely due to immaturity or abnormality of the lungs rather than immaturity of the brain. Malformations such as anencephalus, hydrocephalus and basal encephaloceles are associated either with complete lack of development of the respiratory center or with distortion of tissue sufficient to cause destruction of cells or inhibition of function. Depression of the respiratory center as a result of intrauterine anoxia, transmission of depressant drugs across the placenta, and pressure from traumatic hemorrhage are, as previously mentioned, secondary conditions which may affect the brain and cause an initial inhibition or subsequent interference with respiratory activity.

Conditions primary in the pulmonary tree which may inhibit or alter respirations are: 1—malformations including cartilaginous obstruction of the trachea, and hypoplasia of the lungs; 2—occlusion from aspirated debris either as a result of plugging of the trachea or bronchi, or filling of the alveoli; 3—occlusion from material extruded into the alveoli, as from leucocytes and fibrin in pneumonia or pulmonary hemorrhage in anoxia; 4—rupture of alveoli during artificial resuscitation with consequent collapse of alveoli from bullous emphysema or pneumothorax; 5—incomplete development of the alveoli.

Although all of these conditions are observed fairly frequently, the one most commonly observed in relation to respiratory difficulty is immaturity of the lung parenchyma. Early in fetal life the alveoli are lined by a continuous layer of cuboidal cells and all blood vessels lie in the subjacent connective tissue and mesenchyme. Toward the middle of pregnancy capillary outgrowths from the underlying vessels begin to penetrate the alveolar walls, push apart the cells which originally formed a continuous covering, and become small knuckle-like protuberances one side of which is in direct contact with the alveolar lumen. As pregnancy progresses capillary ingrowth becomes more and more marked and by the end of forty weeks proliferation has proceded to such an extent that the original cells remain only to occupy small areas between the capillaries. If birth occurs before a capillary bed has been produced which is

sufficient to permit oxygen carbon-dioxide exchange at a rate which will permit the maintenance of body processes, death will inevitably ensue. The very immature newly-born infant appears to be able to survive for a few hours even though it is obtaining very little oxygen and it is only after some time that oxygen deprivation causes a fatal outcome. It is the immaturity of the lung that is the primary cause of most of the deaths among previable and very premature fetuses.

Occlusion of the trachea as a result of malformation of the arytenoid and thyroid cartileges is a condition not frequently observed but one which we have seen in two infants who were otherwise normal. Tracheotomy would doubtless have saved the lives of these infants had the condition been diagnosed at birth.

Debris derived from amniotic fluid and present in the trachea, bronchi or alveoli is rarely found in amounts sufficient to prevent maintenance of life, but in combination with hemorrhage or cellular exudation large areas of pulmonary tissue may be obstructed. Pulmonary hemorrhage is usually a result of capillary injury induced by anoxia; as hemorrhage progresses anoxia increases and a vicious cycle results. A cellular exudate composed largely of polymorphonuclear leucocytes may begin to form while the fetus is still within the uterine cavity, and may be sufficient to prevent initial expansion of the lungs, or it may progress in the hours immediately after birth and may cause subsequent respiratory difficulty. Such a process is frequently associated with premature rupture of the amniotic sac or prolonged labor. Either condition permits the entrance of bacteria into the amniotic fluid and subsequently into the lungs. Occasionally however a similar pneumonic process is present even though the membranes remain intact until the time of delivery.

If an infant fails to breathe spontaneously after birth some form of artificial resuscitation must be instituted. The old methods of swinging, spanking, immersing in hot and cold water, dilating the anal sphincter and other equally barbaric performances have fortunately almost completely disappeared. All of these procedures tended to aggrevate whatever condition was responsible for failure to breathe, instead of remedying it, and if the infant survived it was usually in spite of the treatment rather than because of it. The more rational methods of resuscitation consist in freeing the mouth and trachea of mucus and amniotic fluid and in introducing oxygen, or air, if oxygen is not available, into the lungs. Even the latter is not without danger, however, and great care must be exercised to keep the pressure low enough to prevent alveolar rupture. If air escapes into the interlobular spaces or into the pleural cavity, sufficient pressure will often be exerted to cause complete collapse of the alveoli and death may result from the very procedures which were used in an attempt to avert it.

The group of conditions which prevent expansion of the alveoli as a result of external pressure, (exclusive of the leakage of air), are, for the most part, the result of abnormal development. A defect of the diaphragm which permits abdominal viscera to lie in the thoracic cavity not only prevents lung expansion after birth, but interferes with earlier development by exerting pressure throughout the intrauterine period. Even if the viscera could be removed and the defect repaired the lungs are often insufficiently developed to support life.

Massive pleural effusions may be sufficient to prevent respiration; idiopathic cardiac hypertrophy, although rare, may produce a heart which fills the thoracic cavity so completely that the lungs cannot expand. Upward pressure on the diaphragm by polycystic kidneys or peritoneal effusion may also be sufficient to interfere with respiration.

In addition to all of the conditions described above which cause respiratory difficulties, there is one syndrome, not commonly recognized which usually makes its first appearance a few hours after birth. It is most common following birth by Cesarean section although it occasionally accompanies other methods of delivery. The infants usually breathe spontaneously and appear normal for a few hours. Subsequently respiratory distress gradually makes its appearance. Costal retraction, irregular or shallow breathing, variable cyanosis, muscular twitching, and even convulsions may occur. The infants survive, at times, but when death follows, the only pathologic lesion that we have observed in the

majority of these infants, is an increase in cerebro-spinal fluid within the subarachnoid space around the brain. Clifford believes this fluid is the result of anoxia and has described it as occurring in infants who were delivered by Cesarean section because of maternal hemorrhage from placenta previa. We have not observed it in the great majority of infants who have had definite evidence of intrauterine anoxia and believe, in our series at least, it is definitely related to delivery by Cesarean section, rather than to the condition for which the operation was performed. The actual mechanism by which it is produced and any method of prevention are both unknown. Death appears to result from increased intracranial pressure.

A clinical diagnosis of congenital atalectasis is frequently made on those infants who exhibit respiratory distress during the first few days of life, and in some instances x-ray examination may show areas of incompletely aerated lung. Atalectasis, however, is only a symptom of some underlying abnormality and a primary inability of normal lung to expand does not exist. To put atalectasis on a certificate as a cause of death, as is so frequently done, is equivalent to saying the diagnosis is unknown.

SUMMARY

Interference with respiratory activity either in its primary establishment or in subsequent maintenance is due largely to abnormalities which result from environmental conditions. These may have existed prior to birth, during birth, or may occur after birth. Less frequently they may be due to lesions intrinsic in the fetus.

Anoxia having its inception in utero may result from a decrease in the oxygen content of maternal blood or in the total amount of maternal blood reaching the placenta; from interference with oxygen exchange between maternal blood and fetal blood within the placenta; from interruption of the circulation between the placenta and the fetus. During birth anoxia may be produced by any of the above conditions and in addition, by trauma which causes intracranial hemorrhage and produces injury to the respiratory center. Following birth the initial establishment of respiration may be inhibited, or breathing may subsequently become arrested either from the late effects of previously induced anoxia or from conditions intrinsic in the fetus and functioning for the first time after birth. The latter include immaturity or maldevelopment of the respiratory center, immaturity of maldevelopment of the pulmonary alveoli, occlusion of the trachea, bronchi or alveoli by amniotic debris, hemorrhage or leucocytic exudate, prevention of alveolar expansion by external pressure as in pneumothorax, diaphragmatic hernia, pleural or peritoneal effusions, excessive cardiac hypertrophy, and polycystic kidneys. Abnormal breathing, usually making its first appearance a few hours after birth, may be associated with increased cerebro-spinal fluid within the subarachnoid space, and is most often found following birth by Cesarean section. The condition may be fatal or recovery may occur.

DISCUSSION ON PAPERS OF DRS. LUND AND POTTER

DR. Orville Barbour,[1] Peoria: — By applying the principles which are so ably presented by the essayists, to the care of the pregnant woman and the new-born, one may contribute to the health of the mother and the child. The more universally these principles are applied, the lower should maternal and infant mortality and morbidity rates become.

As a practicing pediatrician, I have seen the value of maintaining constant alertness as to the oxygen needs of the new-born. If one will be continually watchful for the signs of oxygen want in the new-born infant and will establish a program which is favorable towards supplying an adequate supply of oxygen when that need is indicated, the results are indeed gratifying to all concerned.

As a pediatrician, I can also see the prophylactic value of being oxygen minded during the obstetric care of the mother. If thereby oxygen deprivation of the fetus can be prevented, one may hope to see fewer tragic results of oxygen deprivation in the new-born child. Fewer deaths of infants, fewer cerebral hemorrhages, fewer cases with cerebral destruction and the sad results therefrom, constitute a most desirable goal, one which is well worth our best efforts.

Both essayists present many interesting, instructive, and thought provoking points, which tempt one to dwell upon them. But the time does not permit. There are just a few of which I shall take the opportunity of mentioning.

Dr. Lund points out the importance of metabolic disease in the mother as an etiological factor of anoxia in the fetus. This brings to my mind a common perplexing and as yet unsolved pediatric problem. I am thinking of the hypertonic infant. The one, who is jittery, who is likely to have gastro-intestinal colic, and perhaps pylorospasm. Although today we are more able to relieve these patients with active treatment, the

fact that they are still so prevalent, is eloquent evidence that their origin is still little understood. I am wondering if some investigation along the line of maternal metabolic disturbances might not prove fruitful. That is a problem which could well challenge the best efforts of those who are engaged in obstetrics. If the obstetricians were as much disturbed as are the pediatricians by the problems of the nervous colicky baby, they would need no urging to attempt it's solution.

The importance of the prophylaxis of anoxia is worth emphasizing by reiteration.

The idea of the therapeutic test of oxygen administration to the new-born as well as to the fetus is appealing. It seems a good safety first measure.

The suggestion of the administration of atropine to the mother raises a question in my mind. Having seen the occasional respiratory depressing effects of atropine in infants and older children, I am wondering about the possibility of such effects upon the fetus. I will appreciate Dr. Lund's enlightening me on that question.

I like the idea of supplying oxygen to the asphyxiated fetus through the mother. The better the condition of the baby at delivery, the less the therapeutic problem after birth, and what is more important the better the prognosis and the more hopeful the future of the child.

Dr. Potter has reviewed comprehensively the etiological factors which may produce anoxia in the fetus and the new-born. These include the indications for prophylactic and active treatment.

Probably the most important of the methods of resuscitation of the new-born is the aspiration of obstructing mucus, from the throat and trachea. Dr. Potter's caution against the use of undue force with the administration of oxygen is well put. Clifford and his associates have pointed out the dangers of the use of a respirator, in such instances. The incubator with controlled oxygen flow is probably as an effective as well as a safe method of oxygen administration to these patients as any.

The Boston and Detroit groups have also stressed the importance of establishing a favorable environment for affording the infant as adequate a supply of oxygen as possible. Disturbing the baby as little as possible, and not adding to its oxygen needs by feeding through the gastro-intestinal tract until the patient's condition has improved, are measures of contributing to it's welfare. The maintenance of a normal temperature, the exposure to an adequate supply of oxygen, and the parenteral feeding of essential fluids are methods which are conducive to the recovery of the asphyxiated new-born. With those infants who are abnormally active or nervous, or who may have some hyperpyrexia, moderate sedation with a barbiturate decreases the oxygen need and contributes towards a favorable outcome. If some stimulation of the respirations seems necessary, the hypodermic administration of a respiratory stimulant, such as coramine, or caffein, seems as effective as any method, and is surely safer than some forms of external stimulation. If, as Clifford and Cole have said, the asphyxiated new-born does not respond satisfactorily to this program, the chances are that he had no chance for a recovery from the destructive effects of the anoxia.

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Until recently we have had no accurate knowledge of the structure of the fetal lung at the end of gestation. As Doctor Potter has told you, we were not sure that the fetus makes respiratory movements in utero in the normal course of development. Some investigators think it normally aspirates its amniotic fluid. It is of more than academic interest to know whether this is true or not. I believe we are in a position to answer this now as a result of experiments in the guinea pig.

We proposed a working hypothesis which is somewhat as follows: The fetus is adequately supplied with oxygen from its placenta and is not anoxemic normally, as commonly thought. Blood highly saturated with oxygen is shunted through the fetal heart directly to the fetal brain. So long as the brain is well supplied with oxygen, thresholds of its centers are high and there is little functional activity. The respiratory center does not discharge rhythmically under these conditions. Several points in this theory have been proved true in more than one species of animals. If all are true we should find that the fetal lung contains little or no amnitic fluid but that a true initial atelectasis exists just before birth.

Lungs of still-born human infants are not perfectly solid organs but show many alveoli partly expanded with fluid. However, one can not possibly argue that the histologic picture of a lung from a fetus which died before birth is a normal one. The lungs of still-born guinea pigs resemble those of humans. The first lantern slide demonstrates this. We killed this animal in utero at term by clamping the mother's uterine arteries, thus asphyxiating the fetus. It began to make respiratory movements in utero when we did this. When these movements stopped and the heart became weak, we delivered the fetus and fixed the lungs in situ with formaldehyde. Alveoli are partially expanded because amniotic fluid had been aspirated. In fact, we saw the fetus inhale this liquid.

The second slide shows the lung from another animal. In this instance we quickly opened the mother's abdomen under local anesthesia and placed a clamp on the uterus across the neck of the fetus to prevent it from aspirating. It was then fixed in situ. The alveoli are in a state of initial atelectasis. Even the

majority of these infants, is an increase in cerebro-spinal fluid within the subarachnoid space around the brain. Clifford believes this fluid is the result of anoxia and has described it as occurring in infants who were delivered by Cesarean section because of maternal hemorrhage from placenta previa. We have not observed it in the great majority of infants who have had definite evidence of intrauterine anoxia and believe, in our series at least, it is definitely related to delivery by Cesarean section, rather than to the condition for which the operation was performed. The actual mechanism by which it is produced and any method of prevention are both unknown. Death appears to result from increased intracranial pressure.

A clinical diagnosis of congenital atalectasis is frequently made on those infants who exhibit respiratory distress during the first few days of life, and in some instances x-ray examination may show areas of incompletely aerated lung. Atalectasis, however, is only a symptom of some underlying abnormality and a primary inability of normal lung to expand does not exist. To put atalectasis on a certificate as a cause of death, as is so frequently done, is equivalent to saying the diagnosis is unknown.

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The second slide shows the lung from another animal. In this instance we quickly opened the mother's abdomen under local anesthesia and placed a clamp on the uterus across the neck of the fetus to prevent it from aspirating. It was then fixed in situ. The alveoli are in a state of initial atelectasis. Even the

bronchioles are closed. This is the true picture of the fetal lung at the end of gestation, a solid gland-like organ, scarcely recognizable as a lung.

The lungs expand rapidly with air after normal birth. The third and fourth slides show what they look like after breathing for five minutes and one hour. Observe that areas of initial atelectasis remain here and there. Farber and Wilson recognized these regions in human infants, although of course no one has ever observed the entire human lung in atelectasis.

We calculated the amount of pulmonary space under the conditions I have mentioned. The following table demonstrates our results:

Pulmonary Space.

Initial fetal atelectasis	2%
Aspiration-expansion	16%
Air-expansion, 2 minutes	28%
Air-expansion, 1 hour	40%
Adult (estimated)	80-90%

We conclude from these experiments that the guinea pig fetus does not normally make respiratory efforts in utero which are strong enough to result in aspiration of the amniotic contents. Anoxia causes it to do so. I believe this is just as true in man as it is in experimental animals. When an infant is cyanotic or pallid and limp at birth the physician can be quite sure that it aspirated fluid. Vernix and meconium may have been drawn into the lungs with the fluid. I have seen sections of lungs of human infants dying a few days after birth showing this condition. Sometimes only small portions of the organs had become expanded with air; other parts failed to fill because passages were plugged with vernix when the anoxic fetus aspirated its amniotic fluid. Therein lies the significance of our experiments.

I want to add a few words to what has been said about resuscitation. The asphyxiated infant needs oxygen and it needs it quickly. We have had some experience in resuscitating animals which were deliberately asphyxiated. I am convinced that it is a waste of precious time to try drugs, mechanical stimulation and most other devices. The only method with which we were successful was positive inflation of the lungs. The technique we used in guinea pigs is simple.

A hpyodermic needle was inserted into the trachea through the midline of the neck, admitting oxygen to the lungs from an attached rubber tube when we compressed the trachea just above the needle. Inspiration and expiration were simulated alternately until the animal began to breathe of its own accord. If I were an obstetrician faced with trying to resuscitate a limp, pallid infant which failed to breathe at all, I should not hesitate to use this technique. It has advantages over other methods because it employs no special equipment, is quick, requires no intubation, and gets the oxygen past the tongue and epiglottis. A hypodermic needle (about no. 18), a piece of rubber tubing, and the breath of the attendant are all one needs.

We rarely failed to resuscitate experimental animals by this method when we continued to use it long enough. Sometimes we had to keep at it for over an hour. But we were dealing with fetuses whose hearts had been allowed to become so weak they could not be palpated. The heart rates began to increase within a minute after getting a little oxygen into the lungs. When the heart failed to pick up in three minutes we found that we had waited too long before starting resuscitation. But of course we were experimenting, and often deliberately allowed twenty minutes of complete anoxia. I want to emphasize the point that this method differs from month to month breathing in as much as it puts air directly into the lungs where it is so greatly needed.

Doctor Lund has spoken of the relationship of anoxia to permanent damage of the nervous system and has described a case in point. There is much evidence from human subjects indicating that brain damage and mental retardation are sometimes associated with histories of apnea at birth. Nevertheless, some physicians still maintain that the case has not been proven, that cause and effect may be reversed; in other words, that the infants may have experienced respiratory difficulties at birth because they were congenitally endowed with imperfect brains. It may be natural to try to avoid responsibility for having brought forth a baby who becomes an imbecile, but present knowledge is such that one can no longer salve the conscience with the thought that neonatal asphyxia is the fault of the child's heredity.

We have experimental proof that anoxia at birth can produce permanent brain injury and that it can produce marked behavior changes. We have some evidence that it may even lead to impairment of learning ability in individuals who otherwise seem entirely normal. I haven't time to describe our experiments in detail, and you may not be interested in all of them, but I will try to summarize a few of the more important findings.

In the first place, we controlled our experiments by pairing each asphyxiated guinea pig with a normal litter-mate delivered without narcosis. Anoxia was induced by clamping the uterine arteries or the umbilical cords without delivering the specimens. The duration of anoxia in our 103 experiments varied from 4 to 21 minutes and most of the animals required resuscitation. About 45 of them exhibited characteristic symptoms of asphyxia pallida; namely, apnea, atonia, bradycardia, relaxation of the anal sphinctors, and cold pale skin.

Regardless of the duration of anoxia, all animals showed at least transient symptoms of central nervous system damage. These were motor weakness, temporary paralysis, tremors, convulsions, etc. Pronounced and persistant symptoms occurred in 40 animals. Flaccid paralysis of the hind limbs was found in some; spasticity, especially in the forelimbs occurred in others. Some appeared to be decerebrated. One

showed a picture of complete spinal transection. Tremors, convulsive movements, ataxia and other motor phenomena were observed. Epileptiform convulsions were encountered occasionally. Sensory functions were affected in varying degree. Somnolence characterized some of the animals. This was striking because the normal guinea pig rarely can be observed to sleep. Motor and sensory disturbances persisted for varying lengths of time. Some animals never recovered, but most showed few symptoms after a week. A few were strikingly like children with congenital spastic paralysis.

Most interesting were the behavior differences which could be observed even after motor functions had recovered. Unlike the controls which were alert, acutely aware of sounds and movements in their environment, animals which had been subjected to anoxia at birth tended to be docile and dull. They paid little attention to environmental changes, did not startle readily and were unafraid of the observer. The control animals often became frustrated when given a simple problem to solve, but the experimental animals faced the situation unconcerned, even though they repeatedly made errors in trying to reach a solution.

Gross pathology was rarely observed. In only one instance did we encounter hemorrhage in the brain at autopsy. Histologically, susprisingly little effect of anoxia could be detected in many of the guinea pigs, but significant changes were recognized in the brain and spinal cord of a few of those exhibiting marked persistant symptoms. Generalized and wide-spread areas of necrosis appeared in the cerebrum, diencephalon and spinal cord. At first the nerve cells lost affinity for stains and showed early chromatolytic changes. Some cerebral edema was observed; small hemorrhages were recognized microscopically but appeared to have no relation to focal areas of necrosis.

Permanent changes in the brain resulted in a few instances. These consisted of atrophy with compression of the cortical layers and dilation of the ventricles. In one pair of specimens of equal weight, the brain of the resuscitated guinea pig was at least 20 per cent smaller than that of its control at seven weeks. Foci of gliosis and marked destruction of the layers of pyramidal cells of the cortex were other findings.

I want to emphasize the point that anoxia did not produce marked pathology in all cases. In fact when all our material is studied I think we shall find that it was only a small percentage of the asphyxiated animals who were permanently damaged. This is important, for if asphyxia neonatorum invariably produced feeblemindedness, paralysis, brain atrophy and other pathology, it is questionable that the physician should make extreme efforts to resuscitate the anoxic fetus. However, we can find no definite correlation between the degree of anoxia or its duration and the amount of brain damage. Some of our experimental animals which were most severely depressed at birth subsequently recovered completely and showed little or no pathology. The nerve cells of the newborn are less vulnerable than those of the adult, and they withstand anoxia for greater lengths of time.

I should regret having a severely asphyxiated infant at birth, but I should not hesitate to use radical methods of resuscitation in the fear that the child will become abnormal by virtue of the anoxia. There is always a fair chance that little or no permanent damage will result.

I am extremely grateful to the people who discussed the papers, and I am sure it is only through the fundamental work of such men as Dr. Windle and his associates that we will ever really know the cause and outcome of the various anoxic conditions that occur.

THE PROSTIGMIN PREGNANCY TEST AND TREATMENT FOR DELAYED MENSTRUATION

M. J. SNEIDER, M.D.

CHICAGO

Current interest in the prostigmin pregnancy test is evidenced by frequent mention in medical circles and by several excellent articles, particularly the original one by Soskin, Wachtel and Hechter,[1] which thoroughly explains its mechanism, technique, and the results of its application in a series of appropriate cases. This report will add 27 cases to those already reported elsewhere by others, and will help to build up a large series on the basis of which the usefulness of the test can be finally evaluated. That the test seems not only diagnostic of early pregnancy but also seems, during the very same time of its application, a rational treatment of delayed menstruation, will be further remarked upon later in this paper.

According to Soskin et al., the rationale of the prostigmin pregnancy test is as follows: Delayed menstruation is very often the result not of pregnancy, nor of endocrine disturbance, but of nervous origin. Inasmuch as the phenomenon of menstruation has been shown to involve not only the specific proliferative effect of estrogens but also the effects secondary to uterine hyperemia, it is conceivable that this vascular mechanism might often be at fault in amenorrhea. There is evidence that the uterine hyperemia preceding menstruation is due to acetylcholine, which substance is elevated in content as a transient result of estrogenic stimulation. The appearance

of acetylcholine in the picture suggests implication of the parasympathetic nervous system, the functions of which are known to be medicated through this substance. If then, there is a relationship between cyclic bleeding and this portion of the central nervous system, frequently encountered cases of amenorrhea occasioned by mental or emotional disturbances are quite understandable. The object of prostigmin in these cases is to potentiate the influence of acetylcholine by inhibiting cholinesterase, the tissue enzyme which is responsible for the hydrolysis and destruction of acetylcholine.

Given a case, therefore of delayed menstruation in which neither pregnancy nor endocrine disorder is etiologically involved, but in which this lack of vascular responsiveness might be operative, administration of prostigmin should produce early menstrual bleeding. As regards the sometimes delayed effects of prostigmin, Taubenhaus and Soskin[2] directly applied an acetylcholine-prostigmin mixture to the exposed pituitary glands of rats, and pseudopregnancy resulted. It was concluded that the mixture caused a release of luteinizing hormone from the anterior pituitary. In the human, this would result in the appearance of an unsupported corpus luteum, which would rapidly regress and be followed by bleeding. At any rate, that prostigmin does produce both early and delayed bleeding is indicated by the first 20 cases in the accompanying chart. Incidentally, careful study of this chart will quickly acquaint the reader with all essential details of the test.

It must be emphasized that the test is not applicable in cases of delayed menstruation known to be due to some underlying endocrine disorder nor in cases in which the previous menstrual history has been in any way abnormal. Finally, the test is not applicable either, in cases in which local pelvic pathology is present and which therefore may be serving as the etiological agent in the amenorrhea.

There has been some criticism as to the value of the prostigmin test for pregnancy, which is largely based upon the limitations just outlined, and which is not justified by practical experience with the test. The difficulty in ruling out the limitations is said to be great. However, if any one of these factors is etiologically operative in a given case of delayed menstruation a careful history and physical examination ought at least to direct suspicion toward them. For example, an existing endocrine imbalance capable of producing amenorrhea does not usually manifest itself in an *abrupt* cessation of the menstrual function; one would expect that previous irregularities in quantity, quality, and time of the flow would have manifested and that these facts would be brought out in the history. Again, any local pelvic pathology serious enough to result in amenorrhea should reveal itself upon thorough pelvic examination. As for the stipulation that previous menstrual history be normal, there are many different causes of delayed menstruation, and in patients with an abnormal menstrual history this delay is probably no new experience and, in patients of menopausal age, could very well be simply an early manifestation of the onset of that syndrome.

A word need be said here about the possibility of prostigmin interrupting early pregnancy. This question was very carefully investigated by Soskin et al., first by animal experimentation and later in clinical practice. In pregnant animals even huge doses of the drug in no way affected the pregnancy or offspring and in humans the very fact that the drug did not in a single case induce bleeding in patients known to be pregnant led Soskin, et al. to make their claim that "it is possible to assure the patient treated with prosigmin that she will soon menstruate unless she is pregnant. If she fails to menstruate, pregnancy may be diagnosed with the same degree of accuracy as is possible with the Friedman test."

COMMENT ABOUT THE CHART

The chart is largely self-explanatory and rather completely answers the more obvious questions which one might ask about the test. Case No. 8 needs to be considered in detail, however, for it serves the double purpose of illustrating just exactly the type case in which the prostigmin treatment or test may *not* be reliable but also illustrates the fact that even in this type of case prostigmin may sometimes have a favorable action. In addition to presenting a history of irregular menstruation as well as numerous previous instances of menstrual delay this pa-

MENSTRUAL FLOW INDUCED

Case No.	Initials	Age	Previous Menstrual History	Days Overdue	Pregnant? According to History and Physical?	Pregnant? According to A-Z or Friedman Test?	Endocrine Disturbance	Pelvic Pathology	Prostigmin Injections	Results
1	C.B.	20	Normal	10	No	Not done	None manifest	None found	1 injection	Flow started about 20 hrs. after injection
2	C.C.B.	21	Normal	3	No	No	None manifest	None found	3 injs. — 3 days apart	Flow started about 72 hrs. after last injection
4	J.F.	30	Normal	16	No	Not done	None manifest	None found	1 injection	Flow started about 12 hrs. after injection
7	E.L.	20	Normal	6	No	Not done	None manifest	None found	1 injection	Flow started about 6 hrs. after injection
8	L.L.	28	Abnormal (see Comment)	8	No	Not done	Probably (see Comment)	Lacerated cervix; infantile uterus	See Comment	See Comment
9	E.M.	21	Normal	3	No	Not done	None manifest	None found	2 injs. — 2 days apart	Flow started about 4 hrs. after 2nd injection
11	M.R.	21	Normal	14	No	No	None manifest	None found	2 injs. — 1 day apart	Flow started about 16 hrs. after last injection
13	E.T.	29	Normal	7	No	Not done	None manifest	None found	1 injection	Flow started 24 hrs later but then stopped — 2nd injection re-initiated the flow in 5 hrs.
15	M.S.	18	Normal	11	No	Not done	None manifest	None found	1 injection	Flow started about 21 hrs. after injection
16	R.L.	27	Normal	30	No	No	Possible (see Comment)	None found	3 injs. — 1 day apart	Flow started about 24 hrs. after last injection
17	M.J.	19	Normal	5	No	Not done	None manifest	None found	1 injection	Flow started 8 hrs. following injection
21	I.C.	27	Normal	7	No	Not done	None manifest	None found	1 injection	Flow started 14 hrs. after injection
24	I.B.	37	Normal	5	No	Not done	None manifest	None found	2 injs. — 1 day apart	Flow started 48 hrs. after 2nd injection
27	J.S.	24	Normal	7	No	No	None manifest	None found	3 injs. — 1 day apart	Flow started 48 hrs. after last injection

tient also had a lacerated cervix and an infantile uterus — findings which would immediately disqualify her as a legitimate candidate for the prostigmin test. On previous occasions of menstrual delay she had been given large doses of estrogens which apparently were successful in inducing the flow some 6 to 10 days later. In the present instance eight days overdue, she was given 1 cc of prostigmin methylsulfate 1:4000 and menstruation started 24 hours later. The following month she was again two days overdue. Menstruation occurred 12 hours following a similar injection of prostigmin. The next month an injection of 1 cc of the 1:2000 dilution was given on the day her menstruation was expected. It occurred within 8 hours of the injection. Prostigmin obviously was much more effective than the estrogens had been. In case No. 16 there had been a gain in weight of 30 pounds in six months. This fact suggests at least the possibility of an endocrine disturbance. This possibility in this case has not been conclusively investigated thus far. Nevertheless, as far as the absence of pregnancy was concerned, the prostigmin test gave a correct response.

Included in this series of cases but not listed on the chart are cases No. 3, 19 and 20. These are especially interesting. Case No. 3 was that of a young woman, 5 days overdue, in whom there was no suspicion of pregnancy as indicated by negative physical findings and a negative

MENSTRUAL FLOW UNINDUCED

5	D.H.	32	Normal	15	Possibly	Yes	None manifest	None found	3 injs. — 1 day apart	No flow
6	R.J.	26	Normal	16	Yes	Not done	None manifest	None found (cervix soft; uterus enlarged)	3 injs. — 1 day apart	No flow
10	O.P.	19	Normal	46	Yes	Yes	None manifest	None found (cervix soft; uterus enlarged)	3 injs. — 1 day apart	No flow
12	L.S.	23	Normal	15	Yes	Yes	None manifest	None found (cervix soft; uterus enlarged)	3 injs. — 1 day apart	No flow
14	J.V.	21	Normal	14	Possibly	Yes	None manifest	None found (cervix soft; uterus enlarged)	3 injs. — 1 day apart	No flow
18	R.B.	29	Normal	24	Possibly	Yes	None manifest	None found	3 injs. — 1 day apart	No flow
22	A.M.	26	Normal	47	Possibly	Not done	None manifest	None found (uterus enlarged; cervix hard)	3 injs. — 1 day apart	No flow
23	A.C.B.	33	Normal	13	Probably	Yes	None manifest	None found (Uterus enlarged to 8 weeks pregnancy)	3 injs. — 1 day apart	No flow
25	M.A.	20	Normal	25	Probably	Yes	None manifest	None found (uterus enlarged)	3 injs. — 1 day apart	No flow
26	A.A.	22	Normal	8	No	Yes	None manifest	None found	3 injs. — 1 day apart	No flow

Friedman test, nor could any other cause for her delay be ascertained. Yet menstrual flow did not occur until 7 days following the third daily injection of prostigmin. This case was subsequently diagnosed as one of thyro-ovarian deficiency. On the other hand, to revert to the findings of Taubenhuas and Soskin previously referred to, it is seen that the probable effect of prostigmin in causing a release of luteinizing hormone from the anterior pituitary may account for part of the drug's ability to bring about a delayed menstrual flow. Thus, stressing the hyperemic effect of prostigmin on the uterus, these authors state, "This factor alone may very well account for those cases of 'nervous' amenorrhea which start to flow within a few hours after the administration of prostigmine. It does not seem to be a sufficient explanation for other cases in which the menstrual flow does not begin until 3 days after the last dose of prostigmine. The present work suggests that, in the latter type of case, the prostigmine causes a release of luteinizing hormone and corpus luteum formation. The corpus luteum is not supported by the usual factors which maintain it for 1 to 2 weeks in the normal menstrual cycle and its existence is therefore transient. Bleeding is precipitated as the corpus luteum regresses."

Case No. 19 was that of a young woman, 8 days overdue, the delay diagnosed as being due to early pregnancy. She was given prostigmin, nevertheless, in an attempt to ascertain whether or not the test would confirm a positive Friedman test previously taken and also in the knowledge that, according to Soskin et al., the drug would not interrupt pregnancy. According to this patient, spotting occurred twelve hours

after the first injection of prostigmin. It did not occur following the subsequent two injections. However, this patient confessed to having taken quinine and hot baths several times during the course of the injections. Very careful questioning of the patient revealed that spotting had really not occurred at all and the contention that it had, had been advanced in the hope that a therapeutic abortion would be performed.

Case No. 20 was that of a woman, 28 years of age, complaining of menstrual delay of days duration. Her menstrual periods had been irregular in the past. Despite this fact she was given prostigmin. Although there was no evidence of pregnancy this patient did not flow until 36 hours following the third injection. An infantile uterus, later verified by surgery, was discovered and hence this patient was really disqualified for the prostigmin test or treatment on two counts, viz.: previously irregular menstrual history and local pelvic pathology. Even so, menstruation did follow the prostigmin injections although not as promptly as in the other cases.

The usual procedure for applying the test is to inject intramuscularly one or two cc of prostigmin methylsulfate (1:2000) on three successive days, unless of course precipitation of the flow is accomplished by either the first or second injection — in which event there is no need for the second or third injection, as the case may be.

If prostigmin will precipitate menstruation in non-pregnant cases of menstrual delay, as apparently it does in selected cases, application of the drug in these cases would appear a reasonable treatment in this disorder, even omitting the consideration that it may at the same time be indicating the presence or absence of pregnancy. The patient complaining of this menstrual delay must be treated. The question of pregnancy is very often of paramount importance in the problem. Careful history and physical examination having revealed no obvious cause of the delay, it is an advantage of prostigmin that it will induce the flow soon after the injections, unless the patient be pregnant. As has been previously brought out, prostigmin will not interrupt pregnancy. This fact should be impressed upon the patient so that she does not look upon the injections as an abortifacient procedure.

SUMMARY

1. Twenty-seven cases in which the prostigmin pregnancy test and treatment for delayed menstruation has been evaluated are presented in chart form. The chart is so designed as to afford all essential information about the test at a glance.
2. The rationale, mechanism, and procedure of the test is further explained in the text.
3. In the series of cases reported herein, the procedure appeared to be not only an aid in the diagnosis of early pregnancy but also a useful treatment in selected cases of menstrual delay.
4. The present series of cases, when added to those previously reported (1) (3) (4), now comprises a total of 122 recorded cases, in which the test and treatment have been used successfully. Further use of the method, and compilations of the results, are certainly warranted in order to finally evaluate the practical usefulness of the procedure.

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CONSERVATIVE MANAGEMENT OF THE SINUSES

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CHICAGO

Diseases, like ladies clothes, go out of style. Most any type of nasal pathology used to be called "catarrh." The common term now for such pathology is "sinus" and if one may predict the next term in vogue for nasal disease will be "allergy." Are we responsible for these terms and for magazine articles on the "sinus racket?" In this era of propaganda, we need accurate and uniform information diffused to the laity and the general practitioner as to what constitutes sinus disease.

Porter,[1] believes that much of the reproach heaped upon the medical profession by the laity

Presented before the Section on Eye, Ear, Nose and Throat, 101st Annual Meeting, Illinois State Medical Society, Chicago, May 20, 1941.

is due to ill advised surgical intervention as practiced by insufficiently trained men. He favors conservative and palliative treatment for acute sinus conditions except the fulminating ones with accompaning orbital and cerebral complications. Most of us agree to this treatment in the acute stage. In cases of chronic sinus disease he finds that adequate *surgical* treatment of the ethmoid cells is often the key to the treatment of pathological conditions in other sinuses and he advises *intransal surgical* procedures in most of the cases. He also favors an external approach by the Lynch Method or the non-obliterative technic of Killian[2] for chronic frontal disease. It is in these chronic sinus conditions where so much difference of opinion exists. Many noses are ruined and the patient often becomes always a sinus patient by radical surgical procedures. In the Presbyterian Hospital, in the Cook County Hospital and in the Central Free Dispensary we are much more conservative in our indications for nasal operations than we were a few years ago. These indications have been ably discussed in several papers by Shambaugh, Jr.[3, 4]

Physiologically, the nose has two functions; olfaction and respiration. In man respiration is the more important. The nose is our air-conditioner and should be kept in the best possible order to warm, clean and moisten inspired air. It has a difficult job in our over-heated homes, in our air conditioned buildings and trains and following some of the nasal surgery which has been done. The nasal cavity, except for the relatively small olfactory area is lined with a specialized form of epithelium called the respiratory epithelium. This epithelium consists of a single layer of ciliated, columnar cells with a few goblet cells which discharge mucus upon its surface. The cilia are in constant motion and sweep particles toward the nasopharynx. Beneath the ciliated epithelium is the vascular network with its mucous glands. These are most abundant in the inferior turbinates and in the anterior ends of the middle turbinates where they are most needed for the inspired air which must be warmed and moistened. The nasal passages are normally narrow and have their own physiological thermostat. We should be cautious about any surgery which might impair this structure and do only surgery necessary to restore the normal anatomy and physiology.

Because of the intimate relationship of the nasal passages with the accessory sinuses, a brief review of chronic rhinitis is important. There are three types of chronic rhinitis, the atrophic, the allergic and the infectious. The most common variety of chronic rhinitis is atrophic rhinitis in the milder form without crusting. The air passages are too wide and the mucus is diminished. The patient complains of nasal obstruction. The mucus film becomes thick and dry and sticks in the nasopharynx. This condition is often associated with a distinct lateral pharyngitis or nasopharyngitis. The mucous membrane of the pharynx becomes reddened, thickened and glazed. The patient complains of a "dropping" behind the soft palate and is certain that he is afflicted with sinus disease. He thinks there must be a reservoir for the source of this post-nasal discharge. The old form of severe atrophic rhinitis with crusts and foul odor has become rare in our clinics. The treatment of atrophic rhinitis as we now see it is simple. Saline nasal irrigations, once or twice daily, remove the dried mucus of the nose and nasopharynx. Gradually the atrophy disappears. The patient is instructed to work and live in air saturated with more moisture.

The second form of chronic rhinitis is becoming more common. It is the allergic type or more accurately hyperesthetic rhinitis. Usually the symptoms are sneezing attacks, watery nasal discharge and nasal obstruction which is alternating and may be intermittent. Some of these patients are sensitive to one foreign protein while others seem sensitive to the entire list. The onset may be sudden and the attack may leave just as quickly. Attacks may be seasonable as at the time of hay fever. The presence of an increased percentage of eosinophiles in the nasal secretion is diagnostic of allergic rhinitis. New refinements in staining these smears have recently been described by Hansel.[5] The treatment consists in finding the causative substance or substances and removing them or desensitizing the patient if possible. If one is unable to find the causative agent the application on the nasal

mucosa of strong chemicals may be tried. The successful treatment of many of these patients is often difficult and seems related to the intractable asthma problem.

The third type of chronic rhinitis is usually the aftermath of an acute head cold. If this persists, the congestion in the mucosa of the nasal passages may progress to fibrous tissue hypertrophy. If this occurs on the posterior tips of the turbinates, it is best treated by surgical removal. Linear cauterization often relieves the chronic thickening of the inferior turbinates. If the mucus in the nasal passages is thick, irrigation with normal salt solution will benefit. The use of 10% Neo-silvol, argyrol in salt solution or 10% to 25% Icthyol in glycerin packs is beneficial.

Many patients with chronic rhinitis believe they have sinus trouble and too often they are treated or have had operations for sinus disease when the nasal condition was responsible for the symptoms. They are not relieved and naturally advise their friends that sinus disease cannot be cured. The accessory nasal sinuses are probably infected during the course of most acute head colds. The cilia however sweep the sinuses clean and the sinus infection usually subsides with the acute nasal infection. This should not be diagnosed as acute sinus disease. However, if the infection is more virulent or the individual's resistance is low, the mucosa of the sinus may swell so that the ostium is occluded. The sinus fills with mucus or pus, the cilia are paralyzed and cannot function. The pressure of the imprisoned secretion on the inflammed mucosa may cause pain. We now say the patient has an acute sinus infection. We should define sinus infection as one containing secretion either mucus or pus. A sinus with a thickened wall and no other symptoms should not be classed as a sinusitis. With one rhinologist any slight thickening of the mucosa of the sinus constitutes sinus disease. With another rhinologist the diagnosis of sinus disease is made only when microscopic pus or shreds of pus can be demonstrated as coming from the involved sinus. As specialists, we need unity among ourselves as to what constitute sinusitis.

The sinuses are out pouchings of the nasal cavity and are lined with the same type of epithelium. Mucous glands are scarcer and the vascular layer is thinner in the sinuses because there is very little air circulation. The ciliated columnar epithelium however, is found throughout the sinuses and in health sweeps the secretions clean, through the ostia.

The conservative treatment of acute sinusitis may now be considered. The inflammed nose with the swollen sinus should be put at rest in a favorable warm, moist atmosphere. If drainage is obstructed, weak solutions of ephedrine, neosynephrin or gluco-fedrin may be used. Heat in the form of external wet heat or steam inhalations is valuable. The electric pad, not water bottle and infra-red lamp may be of some benefit.

These conservative measures control most of the acute frontal and ethmoidal sinus disease and many of the maxillary sinuses never need irrigation. However, after a few days, if the purulent secretions persist from the maxillary sinuses, irrigation may be undertaken through the natural opening using the Pierce natural ostium cannula and warm normal saline. If this is not successful, it is safe to puncture through the inferior meatus using a straight trochar. In this procedure the irrigating system is filled with warm saline to prevent air embolism. Pressure is lightly applied and stopped at once unless fluid returns or if patients complains of pain. As often happens the membrane lining is so thickened that the sinus cavity is obliterated by the swelling.

General conservative measures usually suffice in treatment of acute frontal sinus disease. The nasofrontal duct is seldom cannulized without trauma in the acute stage and this should be avoided. If the symptoms become dangerous with threatened intracranial complications a trephine opening externally into the frontal sinus is a safe procedure and gives the necessary drainage. This type of drainage is preferred to rasping the nasofrontal duct.

Acute ethmoid sinus disease responds best to rest, mild shrinking solutions and to nasal packs of 10% neo-silvol or argyrol for ten or fifteen minutes used once or twice each week. Displacement suction after the method of Proetz in acute

sinus disease may spread the disease to uninvolved sinuses and should not be used. Acute sphenoid sinusitis which fails to respond to rest and mild shrinking can usually be treated by irrigation through the natural ostium.

Of the many complications of acute sinusitis, two are outstanding. One is ethmoiditis in infants which breaks through the lamina papyracea. Treatment here is entirely conservative and consists of external heat until the abscess shows fluctuation when it is drained. No squint has followed any of the cases we have observed. The second complication is acute frontal sinus disease following swimming. There is a great difference of opinion as to the best treatment of this condition. Conservatism is again emphasized; rest, heat and mild shrinkage with no attempt to cannulize or fracture middle turbinate. If drainage is insufficient or temperature becomes elevated or intracranial symptoms intervene a trephine opening into the lower part of the sinus is indicated. This will provide drainage and recovery will follow, except in the types of cases where the infection enters the blood stream and causes an early osteomyelitis. For these desperate cases of osteomyelitis one must be radical and adopt the procedure described by Moser[6] of thorough eradication of diseased bone. The difficulty in doing this operation is to judge when one is in healthy bone and how far from diseased bone. The X-Ray is of little or no diagnostic value in this type of disease.

Chronic sinusitis is more difficult to diagnose than acute sinusitis. There is great difference of opinion among rhinologists as to what constitutes chronic sinus disease. Here again it seems we should insist that some visible macroscopic pus be found in the chronically infected sinus. In other words a sinus with a thickened membrane should not be classified as chronic sinusitis. We as rhinologists need more uniformity as to what constitutes chronic sinus disease. Otherwise we have no criticism of the laity and general practitioner for calling any nasal catarrh, sinus disease.

In chronic sinus disease the cilia may be active and sweep secretions from the ostia but they do not keep the sinus free of pus. We do not know why this is true but one important factor in chronicity is the anaerobic type of streptococcus which is present. The sudden cures of chronic maxillary disease following window operations must be due to aeration and ventilation and not to more adequate drainage. Irrigation is the most important diagnostic aid in the maxillary and sphenoid sinus disease. If the frontal sinus can be cannulized, irrigation is diagnostic. If this cannot be done, we must rely upon the X-Ray which may show sclerosis of the walls even in a sinus which has long since been inactive. The diagnosis of chronic ethmoiditis is most difficult. X-Ray is of some aid and the displacement technic of Proetz is of considerable value.

After the diagnosis of chronic maxillary sinusitis has been made, every case deserves a thorough trial with a series of simple irrigations. Every patient must have careful Rotengen examination of the upper teeth to rule out possibility of apical abscesses which may be feeding the sinus. Such teeth should be extracted at once. If there is improvement after irrigations, this treatment should be continued for months and often the infection heals. The chemotherapeutic drugs have been used recently. Sulfathiazole is injected into the sinus after irrigation. Favorable results are reported but it is too early for definite conclusions. Irrigations are repeated often enough to keep the sinus clean. These may be necessary daily at first, then three times a week and then twice a week. If no improvement in the quantity or quality of the pus is noted in three weeks, surgery is indicated. If the patient refuses operation irrigations may be continued and sometimes with successful cure. The window operation under the inferior turbinate will clear up most of the chronic maxillary sinus infections which fail to respond to irrigations. The window should be made large for good aeration and the edges should be bitten clean, because of less tendency for its closure. The Caldwell Luc-operation is seldom considered in our clinics.

In treatment of the chronic frontal sinus, best results are obtained if the sinus can be cannulated and irrigated. Gravity aids recovery of the patients. Granulations often form around the opening of the nasofrontal duct with varying degrees of oedema. After repeated irrigations with the cannula, these granulations tend to disappear. If the duct cannot be cannulated, a ditch in the anterior ethmoid cells will permit the cannula to enter the frontal sinus easily.

Operations for enlarging the nasofrontal duct cause greater fibrosis. The external frontal operation for chronic frontal disease has seldom been indicated in my experience.

Chronic sphenoid disease is rare. It is usually treated by irrigations and occasionally by enlargement of the ostium after removal of the posterior end of the concha media. Care must be exercised not to wound the naso-palatine artery which passes across the anterior inferior wall of the sinus.

Chronic suppurative ethmoiditis responds in most cases to the Proetz method of displacement suction. ¼% ephedrine in normal saline is used instead of the ½% originally advised by Dr. Proetz. The treatments are given once a week and repeated until the returned solution is free of pus and the patient is free of symptoms. Nasal packs of 10% neo-silvol, 10% argyrol and 10 to 25% icthyol in glycerine are of value. These packs are used according to the technique of Dowling and left in the nose fifteen to thirty minutes. The remaining cases of chronic suppurative ethmoiditis which do not improve are subjected to surgery. A simple ditch type of intransal ethmoidectomy popularzied by McGinnis is carried out without disturbing the middle turbinate. The anterior cells are ditched first. The septum is corrected if the nasal passage is too narrow on the diseased side. The most important part of the ditch operation is the careful and prolonged after treatment to prevent ingrowth of scar tissue which will defeat the purpose of the procedure. If pus persists, the ditch should be carried out through the posterior ethmoid cells and the after treatment carefully continued. The external ethmoidectomy is rarely necessary and the results are often unsatisfactory. After treatment is frequently neglected and polpoid tissue reforms.

Many cases of chronic sinus disease fail to respond favorably to radical or conservative treatment because there is an underlying allergic factor. The valuable work of Hansel has made us more alert to allergic factors when sinuses fail to respond to the usual management. If the nasal mucosa is pale and polypoid or there are polypi in the nasal pasages, even in the presence of frank pus, allergy should be sought and eliminated before dealing with the polpi. More rhinologists are doing allergy tests because they are trained to observe the results of desensitization. To summarize the reasons for poor results in treatment of sinus disease:

1. Lack of unity among rhinologists as to what constitutes sinus disease.

2. Treatment of nasal allergic conditions, foreign body and rhinitis as sinus disease.

3. Improper treatment eg. To use packs or sprays when irrigation or suction is necessary.

4. Over radical operations which wreck or disable the normal anatomy and physiology of the nasal passages.

5. Necessary operations badly performed as a submucus resection which leaves the nose blocked or an antrum window which is too small.

To summarize the end-results of conservative treatment of chronic sinusitis as to cure:

1. Chronic maxillary sinusitis is usually cured by simple irrigations and with an occasional window. Recurrences do occur and if dealt with promptly the infection usually subsides quickly with conservative management.

2. Chronic frontal sinusitis usually responds to conservative management with gravity aiding. Occasionally a submucus resection of the septum or an infraction of the concha media is needed to promote drainage.

3. Chronic sphenoiditis is rare in our clinics unless seen in a nose where already to much surgery has been done.

4. Chronic ethmoiditis is the most unsatisfactory sinus disease to respond to any form of management. These patients are prone to recurrences. It is difficult or impossible to completely exenterate every ethmoid cell which fact is probably responsible for our unsatisfactory results. With these persistent infected pockets results are satisfactory only if the patient is faithful until healthy mucus membrane lines the ditches. An operation on the ethmoid for cure may be compared to the road through virgin forest. The road is soon lost unless kept open. In the clinics at Cook County hospital and the Central Free Dispensary we have more satisfactory results with conservative management. External ethmoid operations have been carefully and properly done on anxious patients who expected forever afterward to be free of their sinus disease. Such was not the case.

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DISCUSSION

Dr. R. W. Watkins, Chicago: Dr. Curry has remarkably well covered the treatment of sinus disease in his excellent paper. He has left very little to add in discussion. He has brought out that there is a great deal of confusion in the minds of the laity and physicians as to what constitutes sinus disease. I have had patients who thought that a sinus and sinus disease were synonymous.

That the ethmoid should be considered the key to the situation is logical because of its position at the opening of the sphenoid, maxillaries and frontal. Swelling in its membrane can block the other sinuses. Secretions from the labyrinth may find their way into other sinuses, especially through the improper use of sprays, violent blowing of the nose or several other treatments. We must, in conservative treatment, call in the teamwork of the internist, unless we wish to be considered specialists of the skin and its contents. We very often find that swelling in the nose is due to abnormal secretion of the thyroid. Anemia may be a factor. Change of climate is often beneficial, and I have seen cases with much polypoid formation in the nose and after a sojourn for a month or two in a high altitude and dry climate, this has disappeared — cases in which surgical intervention has been tried again and again.

As he said, chemotherapy is in its infancy and we do not know the effect. We have proven the use of sulfanilamide to be of great value in infections due to hemolytic streptococci, but unfortunately, or fortunately, most infections are due to Staphylococci, Pneumococci, and green Strep. What sulfathiazole will do for these I do not know. If we take the newspaper accounts of what sodium sulfanilamide will do for the sinus, we might as well fold up our white coats and go to the farms we are always thinking about.

Dr. Louis Ostrom, Rock Island: At Rochester they are using radium in a number of these recurring ethmoid cases — in many that previously and at other places have been well treated by competent specialists. I would like to ask his opinion of that.

Dr. Louis T. Curry, Chicago (closing): I want to thank Dr. Watkins for his discussion. So far as radium is concerned I have had no experience with radium in ethmoiditis. We do use it for other purposes, and the trouble has been in getting the radium where we wanted it, and not to areas we wish to skip. I left out the discussion of x-ray in the treatment of sinusitis because our experience has not been extensive. We have tried it but our conclusions have not been definite.

HYPOCHROMIC ANEMIA AND MALIGNANCY

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Hypochromic anemia is the hematologic term applied to a large group of anemic states in which the red blood cells have a subnormal amount of hemoglobin, — the loss of hemoglobin exceeds the loss of red cells and the color index is below one. Hypochromic anemias are by far the most common anemias encountered, constituting perhaps 90 to 95 percent of all anemic states. They are frequently referred to as "secondary anemia" since their causes are many and nearly always due to some other disease condition. Various malignant processes are nearly always accompanied by hypochromic anemia and the degree of anemia may be entirely out of proportion to the extent of the malignant growth. Usually the hypochromic anemia of malignancy is severe in character and probably produced by interference in the construction of the hemoglobin molecule which may be brought about by the liberation of some unknown substance from the growing tumor.

It is generally agreed that only hypochromic types of anemia respond to iron therapy and the hypochromic macrocytic types to liver extract. Hypochromic types are not corrected by liver and much expense can be saved the patient by avoiding expensive liver preparations and relying on the relatively inexpensive iron therapy, unless the red cells are also definitely reduced. Naturally, every effort must be made to ferret out the cause of a hypochromic anemia and eliminate it if possible, otherwise all therapeutic efforts will be eventually defeated.

Read before the Section on Medicine, 102nd annual Meeting, Illinois State Medical Society, Springfield, Ill., May 20, 1942.

Transfusions are seldom indicated in the correction of a long standing chronic hypochromic anemia, such as occurs in malignancy, and without doubt transfusions are much overdone. Kracke states, "Even though the hemoglobin may be only 25 per cent and the red cells quite low, this within itself is not an indication for the transfusion of blood, provided the patient shows no emergency symptoms referable to the anemic state. In some instances of anemia following the loss of large quantities of blood, the procedure is indicated, but mainly to restore a depleted blood volume. There are times when a patient does not seem to respond to the administration of what appears to be an adequate amount of iron and, in such cases a transfusion of 500 cc of blood seems to provide some type of stimulus that initiates a satisfactory response to therapy. To use it routinely, however, in severe hypochromatic anemia, is, as Castle and Minot state, 'an expensive and clumsy method of securing a therapeutic result.'"

Intravenous fluids must be administered with great caution as they may dilute the red cells to a danger point. Blood plasma should not be used in severe hypochromic anemia. It merely dilutes the red cells so the anemia is accentuated. The injection of sodium chloride results in a decrease in the haemoglobin content by further dilution of the blood plasma.

Iron Preparations — Kracke states, "The administration of suitable preparations and adequate amounts of iron is the most valuable method of correcting all types of hypochromic anemia." Emphasis has been made by numerous investigators that the iron dosage must be very large, and in divided doses of an absorbable preparation. The addition of copper to the iron is not necessary in the therapeusis of hypochromic anemia. There is now general agreement that the inorganic iron salts are the only forms of iron to use and Witts has shown that the ferrous salts are most absorbable and are therefore more readily utilized. Strauss gives preference to the freely soluble preparations such as iron and ammonium citrate or ferrous sulphate (especially if an achlorhydria is present) in preference to the relative insoluble forms such as reduced iron or ferrous carbonate. According to the works of Witts and Strauss, the official U. S. P. preparations shown in Table 1 will give maximum hemoglobin regeneration if used in the daily doses indicated. These studies also show the advantage of administering ferrous sulphate, which requires the smallest daily dosage because of the relatively high percentage of the iron that is utilized compared with the other preparations.

TABLE I.

SOME OFFICIAL U.S.P. IRON PREPERATIONS

Preparation	Solubility	Daily Dosage	Iron Content (Milligrams)	Iron Utilization	No. Mgs. Iron Utilized
Reduced iron	Relatively insoluble	45 grains	2500	1%	25
Ferrous carbonate mass (Blaud's)	"	60 grains	400	7%	28
Ferrous carbonate pills (Bland's)	"	60 grains	400	7%	28
Iron and ammonium citrate	Freely soluble	90 grains	1200	2%	24
Ferrous sulphate	"	15 grains	300	14%	42

Incidentally, ferrous sulphate is the most economic type of iron, of the widely used iron preparations, for the treatment of hypochromic anemia. The three most widely used and economical ferrous sulphate preparations are 1. the U. S. P. ferrous sulphate tablets (5 grains per tablet containing about 100 mgs. of metallic iron, 50c to 90c per 100); 2. Feosol tablets (3 grains per tablet, containing not less than 63.5 mgs. of metallic iron, 90c to $1.00 per 100, Smith, Kline & French Labs.) and 3. Hematinic Plastules, (5 grains per plastule, containing not less than 95 mgs. of metallic iron, $1.35 to $1.50 per 100, Bovinine Co.). The usual daily dosage of ferrous sulphate is from 15 to 45 grains (1 to 3 grams) divided in three doses with or immediately after meals. Enteric coated preparations are not necessary, in fact, it is important that the iron be acted upon by the gastric contents so it can go into solution quickly as absorption takes place mainly in the duodenum and to some extent in the pyloric portion of the stomach. In general, the more severe the anemia the more iron is required, but the exact dosage can only be established by frequent hemoglobin determinations and clinical experience. Factors which inhibit the absorption of iron are absence

of thyroid secretions or vitamin C and the presence of various diseases such as infections (hence the necessity of searching for and removing every source of focal infection) and nephritis. It is usually advisable that patients take one to two glasses (6 to 12 ounces) of orange juice or grape fruit juice daily so that sufficient vitamin C is available (or the oral administration of 100 mgs. of cevitamic acid daily). Parenteral iron therapy is unnecessary (and may cause disagreeable or dangerous reactions) except in those unusual instances where iron cannot be taken by mouth. Usually the administration of liver with iron is unncessary in hypochromic anemia. Murphy, however, advises the muscular injection of 3 cc of liver extract (prepared from 100 grams of fresh liver) at weekly intervals "to hasten the improvement of the blood and especially the patient's general physical condition." This is equivalent to the effects obtained from the oral ingestion of about 12 lbs. of fresh liver. Such supplementary liver treatment is only advisable when the red cell count is also low.

TABLE II

THREE OF THE LEAST EXPENSIVE FERROUS SULPHATE PREPARATIONS

Preparation	Size	Iron Content Mgs.	Cost Per 100	Cost Per 100 mgs. of Iron
Ferrous Sulphate Tablets U.S.P.	5 grs.	100 mgs.	50c-90c	0.5-0.9c
Feosal Tablets	3 grs.	63.5 mgs.	90c-$1.00	1.4-1.6c
Hematinic Plastules	5 grs.	95-100 mgs.	$1.35-$1.50	1.4-1.6c

It is highly advisable to regulate the patient's diet to secure an adequate amount of vitamins and iron. In general the diet should be liberal in animal proteins, fruits and green vegetables. The high amount of iron in liver, heart and kidney makes it advisable that these meats be included in the diet a number of times each week.

Quick has recently restated the necessity of doing everything we can to enhance the effect of radiation by vigorous use of anti-anemic medication, etc. He states,

"In our seach for ways and means of rendering tumor tissue more sensitive to irradiation and normal tissues more resistant, even though slightly, we must not lose sight of the biophysiological factor. It has long been known that an optimum response to a given amount of radiation does not occur in the presence of a secondary anemia or in the presence of that major factor in the production of secondary anemia in the cancer patient — low grade mixed infection.

"In other words, the optimum response to therapy is attained only in a patient whose general appearance and sense of well being is at a high level and who is physiologically in balance.

"Those of us who have been aggressive during the past few years with liver and vitamin therapy along with free use of blood transfusions to support our specific radiation therapy are convinced of the value thereof.

"In our seach for tumor sensitizing and selective action agents and normal tissue resistance builders, there is a wide field for further careful investigation in a systematic study of the anti-anemic preparations, vitamins and specific hormones."

CONCLUSION

With the increasing use of radiation methods in the treatment of malignancy, physicians should be conversant with the fact that patients suffering from profound secondary (hypochromic) anemia usually respond poorly to irradiation. It is imperative, therefore, in treating malignancy sufferers, that the blood picture be studied and efforts be made promptly to combat the anemia if and when it is present.

Ferrous sulphate, because of its relatively high iron utilization, requires the smallest daily dosage and is the most economic iron preparation to prescribe in the treatment of hypochromic anemia. After all it is the number of milligrams of iron that are utilized by the body that counts in the treatment of this condition.

(I am grateful to Dr. Roy R. Kracke, Prof. of Pathology, Emory University School of Medicine, for his kindness in reviewing this paper before publication).

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JAUNDICE ASSOCIATED WITH GIARDIA LAMBLIA INFESTATION

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Some months ago a patient came to me complaining of jaundice. He had been advised to undergo a cholecystectomy elsewhere and it was my first impression, also, that surgical intervention would probably be necessary. However, in the course of a diagnostic study, which will be described later, myriads of Giardia lamblia were found in the bile contents. Treatment with atabrine resulted in prompt relief of the jaundice and no parasites were found in the bile drainage thereafter. Had this patient been operated upon no beneficial end result would have occurred and theoretically, at least, some harm could have resulted. With this in mind, it is my purpose to briefly review the available literature and present a case report.

Giardia lamblia was first discovered by Leeuwenhoek in about 1675[1]. It was again discovered by Lambl in 1859[2]. In 1915 it was classified by Stiles[3] as being a protozoan of the class Mastigophora, subclass Zoomastigina, family Octomitidae, genus Giardia lamblia. This class is otherwise known as the flagellata. The morphology of the Giardia is divided into two phases, the trophozoite and the cystic stage. The former is found in the upper intestinal tract, unless diarrhea occurs, when it may be recovered in the stools, while the latter is found in the stools. This protozoan is found in practically all countries but it is said to be more prevalent in tropical and subtropical climates. It is transmitted by ingestion in food contaminated with the cysts. It is very prevalent in areas where sanitation is poor such as it is in large industrial districts[4, 5]. From studies on the incidence of infection, this parasite is found to be the commonest intestinal flagellate. Numerous articles have been written on the subject of Giardia lamblia infestation of the bile tract. Prior to 1937, these articles,[6,7,8,9,10,11,12,13,14,15,16,17,18] in the main, dealt with case reports of cholecystic disease associated with the finding of Giardia in the bile. There was much controversy as to the pathologic significance of this association. Treatment was unsatisfactory, at that time, and accordingly the authors could not prove that eradication of the parasite would cause alleviation of the symptoms. In 1937, Galli-Valerio[19] introduced atabrine, a highly efficient therapeutic agent for the treatment of Giardiasis. Since then, after observing the results of treatment in these patients, it is generally agreed among clinicians that Giardia lamblia can be pathogenic in the human.

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CASE REPORT

The patient, a white male salesman, age fifty-four years, was admitted to the clinic on December 1, 1941, complaining of jaundice. He stated that he first felt ill on November 10, 1941. At that time he noticed "a general bad feeling," he was "draggy" and drowsy and lacked an appetite. There was no history of pain or fever or chills. On November 12, 1941, he noticed jaundice and shortly thereafter he noticed light stools, dark colored urine and intense itching of the skin. Two days before admission he noticed a soreness in the right upper quadrant occupying an area of about the size of a man's hand. There was no history of diarrhea or of drug or alcohol consumption. He lost 18 pounds of weight.

The physical examination showed an obese, moderately jaundiced man with numerous scratch marks. The weight was 200 pounds. The blood pressure was 96/64; the pulse was 56; the temperature was 98° F. The liver edge was palpable three finger breadths below the costal margin and it was slightly tender. Otherwise the physical examination showed nothing of note.

The laboratory tests were as follows: The urine showed specific gravity, 1.023; reaction, acid; albumin, faint trace; sugar, negative. Bile was present 4 plus. Microscopically a few pus cells were present. The blood count showed the hemoglobin to be 76 per cent; the red blood cells numbered 3,650,000; the white blood cells numbered 7,200 of which 60 per cent were polymorphonuclears, 38 per cent lymphocytes and 2 per cent eosinophiles. The Blood Kline and Kahn flocculation tests for syphilis were negative. The stool test showed urobilin 4 plus, bile 4 plus and urobilinogen 2 plus. The stool was light colored and showed no blood or parasites. The blood icteric index was 96. The van den Bergh was direct immediate positive 4 plus and biphasic 1 plus. The electrocardiogram was essentially normal. X-rays of the chest and gallbladder area (without dye) were negative. Fluoroscopic examination and x-rays of the stomach and colon were negative. On December 3, 1941, a biliary drainage was done after the manner described by Kolmar[20]. The duodenal contents showed no parasites or bile. Ten minutes after the instillation of magnesium sulfate a golden yellow bile returned containing no parasites or sediment. Ten minutes later a darker thicker bile ap-

peared containing precipitated bilirubin and clumps of pus cells. No parasites were seen. Ten minutes later the bile became light yellow and no sediment was present. No treatment was instituted. On December 4, 1941, the biliary drainage was repeated. No parasites were seen in the duodenal contents. Ten minutes after instillation of magnesium sulfate a golden yellow bile was obtained. There were no parasites. Ten minutes later darker bile without parasites or pus cells was seen. Ten minutes later a light yellow bile was obtained without sediment. Ten minutes later a heavy sediment was obtained containing mucus in which were seen non motile Giardia lamblia in abundance. No treatment was instituted. On December 5, 1941, biliary drainage was repeated. Bile A, B and C all showed heavy precipitation of bilirubin. Bile B showed myriads of actively motile Giardia lamblia. On this date the icteric index was 96 or the same as upon admission. On December 6, 1941, treatment was instituted. He was given atabrine, grains 1½ three times a day for five days. On December 8, 1941, he stated that he felt much improved for the first time since the onset of the illness. His biliary drainage showed no Giardia and his icteric index had dropped to 59. On December 9, 1941, the stools were colored brown and the urine was clear colored. The patient stated that he "felt well." On December 10, 1941, the biliary drainage showed no parasites and the icteric index was 46. On December 13, 1941, he was dismissed. The biliary drainage was negative for parasites and the icteric index was 38. On that date the Graham-Cole cholecystogram showed a normally functioning gallbladder. On December 20, 1941, he returned for re-examination. He stated that he felt well. I could detect no jaundice although the icteric index was 25. The biliary drainage was negative for parasites.

COMMENT

It is not within the scope of this paper to prove that Giardia lamblia are pathogenic or that they can obstruct the bile duct by sheer force of numbers as is the opinion of Lyon and Swalm[14] or that the parasite may liberate a toxin, resulting in edema of the papilla of Vater and thus obstructing the duct as was expressed by Westphal and Georgi[6].

Nor can it be proven that this was or was not acute catarrhal jaundice, inasmuch as there are no good diagnostic criteria for catarrhal jaundice.

Suffice to say that patients having jaundice, associated with the finding of Giardia lamblia in the bile contents, should be given the treatment with atabrine. No harm will be done and a cure may result. These cases should not be operated upon unless there is some other operable organic disease associated with the Giardiasis and then only after the Giardiasis has been eliminated. Papke[21] reported twenty-two cases of Giardiasis of the bile tract. Four of these cases were operated upon, a cholecystectomy having been done. This was before the era of atabrine therapy. In three of those four cases only transitory improvement resulted and in one of the four cases "transitory aggravation" resulted. He explains this by stating that the body makes an attempt to compensate for the absence of the gallbladder by dilatation of Oddi's sphincter and that this results in insufficiency of the papilla of Vater with the result that infectious material from the duodenum may readily pass into the bile ducts. These four cases were given atabrine, later after its discovery, with complete relief of symptoms.

SUMMARY

1. Patients with jaundice should be examined for the presence of Giardia lamblia in the bile contents.
2. If Giardia lamblia be present, they should be given atabrine, grains 1½ three times a day for five days.
3. If the pathologic physiology is the result of the infestation with Giardia lamblia, an improvement should result promptly.

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ATYPICAL PROBLEMS IN APPENDICITIS

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Typical cases of appendicitis yield classical symptoms and signs and when brought before intelligent scrutiny present no complicated problems in diagnosis and management. The preponderance of typical material in appendix experience is liable to lull the surgeon into a state of charmed security and a sense of false confidence. From the heights of this elevated position he may be ignominiously toppled by a few experiences with atypical cases.

The elaboration of the following cases makes no attempt to cover the field of atypical variations of appendicitis but merely presents some of the difficulties and problems encountered by the author within a relatively short period of time.

Case 1. A young lad of four was brought into St. Francis Hospital with a history of an attack of asthma of one week's duration associated with some bronchitis and tonsillitis. Last night the child developed severe pain in the abdomen with drawing up of the right leg, with a fever of 101°, flushed face, rapid and grunting respirations and some cough. At the same time, the right abdomen was held markedly rigid and was extremely tender to pressure. The white count was 54,400 this morning and a throat culture yielded a hemolytic streptococcus and a pneumococcus type No. 19. X-ray of chest was inconclusive. Anti-pneumococcus serum was started. Blood culture was negative. The abdominal distension on admission, as well as the rigidity, disappeared the next day and did not recur. The leucocytosis increased to 60,000. Three days after admission, a thickening of the right flank with spasticity of right upper abdominal wall was found with greatest tenderness over the right costovertebral region. A KUB film was taken which showed a shift in bowel shadows to the left. Three days later the white count was down to 38,400. A diagnosis of a perinephritic abscess or of a retroperitoneal appendiceal abscess was made. Needle aspiration the next day yielded pus. A lumbar incision was made giving rise to the draining of considerable foul-smelling pus, smelling of bacillus coli infection. Along with the pus, a small flat hard stone was found. It was sent to the laboratory to determine whether it was a hard fecalith from a perforated appendix or whether it was a kidney stone. It was identified as a calcium phosphate stone which the pathologist assured me was more likely to arise in the appendix. Culture of the pus showed streptococcus hemolyticus and bacillus coli. Clinical recovery thereafter was prompt and rapid. Four months later, a McBurney incision was made and an elongated retrocecal appendix penetrating the posterior abdominal wall was found. Dissection had to be carried through the posterior abdominal wall in order to liberate the appendix and remove it from its retroperitoneal bed.

Comment: — Apparently the terminal end of the appendix had perforated extra-peritoneally and thus explained the absence of intra-abdominal pathology. An original abdominal incision would probably have set up a fatal peritonitis.

Case 2. A well built, well developed young woman of twenty-six was sent in to St. Francis Hospital by Dr. L. R. with an acute abdominal condition diagnosed as acute salpingitis. The presenting complaint was pain in the right lumbar region referring around the flank down to the groin and to the urinary meatus and accompanied by burning micturition. The present trouble started about 30 hours ago and was accompanied by nausea and vomiting. Temperature on admission was 98.6°; pulse 84. Patient stated she had hematuria in the past and a former attending physician was reported to have found pus and blood in the urine . She had two bowel movements today. The physical examination demonstrated acute tenderness over the right costovertebral area, along the right flank, right abdomen, groin and over the bladder. There was definite spasticity of the right abdominal muscles. There was tenderness over the left lower abdomen but not over the right. The white blood count was 20,800 with 87% polymorphs. Urinalysis

was negative. One hour later, definite rebound tenderness was elicited over the right lower abdomen.

Comment: — The possibility of an acute renal colic accompanying a pyelonephritis was considered at first but the negative urine and the subsequent demonstration of rebound tenderness over McBurney's point, led to the diagnosis of acute appendicitis. At operation, a highly inflamed retrocecal appendix passing upwards to the right kidney was found and removed. Convalescence was uneventful. It is well to remember that when the clinical diagnosis is in doubt, a subsequent examination within an hour or more may yield more conclusive clues that will suggest the diagnosis.

Case 3. A young married man of twenty-six was referred by Dr. G. U. for cramplike abdominal pain across the lower abdomen of twenty six hours duration. He had general malaise and nausea, no vomiting or urinary symptoms. He had a good bowel movement 5-6 hours ago. He gave a history of one previous attack. Physical examination showed general abdominal tenderness and marked rigidity with rebound tenderness over right lower abdomen and some tenderness in the right flank. X-ray of diaphragmatic region in the upright position showed no subphrenic air to suggest ruptured peptic ulcer. At operation, a perforated appendix, retrocecal in position was found and removed. Sulfanilamide powder was sprinkled into the wound and the incision closed without drainage. Postoperatively, the patient was treated as for peritonitis. He improved gradually and partook of a fair diet one week later. His abdomen, however, felt doughy, remained slightly distended and he had a persistently elevated white count. The incision shows no evidence of infection. A rectal examination disclosed evidence of a developing pelvic abscess. After further localization four days later, a large pelvic abscess protruding towards the rectum was drained by rectal incision. Subsequent to this, recovery was rapid.

Another case (in a young Jap) of perforated appendicitis with peritonitis which was operated and in which a pelvic drain was inserted, subsequently developed a pelvic abscess which required rectal drainage.

Comment: — It is interesting to note that a pelvic abscess may form in perforated appendix cases whether a drain *is* or *is not* inserted.

Case 4. The patient, a young man of twenty-six, was admitted to St. Francis Hospital for observation because of a gradual but persistent development of mild abdominal cramps around the umbilicus of a few hours duration accompanied by nausea but no vomiting. White count prior to admission was 8,000 with a normal differential count. A tentative diagnosis of mechanical obstructive appendix was made. At eighteen hours from onset the white count rose to 15,000 and an immediate appendectomy was performed. The appendix was enlarged and reddened and constricted by bands in its middle half. Some watery fluid emerged from the peritoneal cavity when the latter was first opened. The appendix was removed in the usual fashion with inversion of the stump. The patient was unable to sleep the succeeding night and by morning complained of considerable soreness and pain throughout his abdomen. Pain and restlessness continued and the temperature rose steadily until it was 104° at 11 P. M. An aching tenderness developed over both kidneys and bladder. The chest was clear clinically and urinalysis was virtually negative. Intravenous fluids and sulfadiazine were started. The patient's fever varied between 101° to 104° for three to four days with the white count reaching 21,000 and the Schilling differential showing a marked shift to the left with nuclear index of less than 5. An acute dilatation of the stomach developed, relieved by suction tube, and on the second postoperative day the scrotum became edematous with an underlying epididymitis of the left testis. Both spermatic cords were tender. On the fourth day, I observed some induration at the lower end of the incision. The incision was opened and some watery bloody pus having no odor, was drained. A culture was made and two days later the report indicated a culture of pure streptococcus hemolyticus, whereas a coincident blood culture was negative. Following this, the temperature reduced to normal and although the patient improved rapidly, he felt the toxic effects for several weeks.

Comment: — Streptococcus appendicitis is uncommon. Severe toxic symptoms following an operation on an uncomplicated appendicitis should make one actively suspicious. I attribute this patient's recovery to the immediate institution of sulfadiazine and to the administration of intravenous fluids.

Case 5. This case deals with a married woman of forty-nine who was operated for a huge multiple fibroid uterus. The history is of small consequence, the patient having casually noted a lump in the lower abdomen. Her only other complaint was an obstinate constipation. At operation in addition to the pathology of the uterus, a large appendix was found with a walnut-sized nodular enlargement in its middle to which the right tube was attached. A supravaginal hysterectomy was performed and the appendix and right tube were removed "in toto" with inclusion of most of the mesoappendix. The pathologist's report was carcinoma of the carcinoid type.

A preoperative diagnosis of a primary carcinoid of the appendix is extremely unlikely but it is well to remember that the condition does

not necessarily give rise to clinical manifestations even after the late formation of metastases. Besides the symptomless form, a carcinoid may take on the clinical course of a chronic appendicitis with or without crises, or may develop the clinical course of an acute appendicitis.

The typical carcinoid, first described by Oberndorfer and later by Mason, is a carcinoma-like tumor found in the appendix or in the intestine and although of low-grade malignancy is usually more malignant in the small intestine. The typical cells are the "argentaffine cells" which are thought to be sympathicoblasts. The tumor tends to be locally malignant and to metastasize late.

The treatment of carcinoid of the appendix consists of customary appendectomy with removal of the meso-appendix. A local involvement of the small intestine should be treated by regional resection and anastomosis. The form with metastases must be considered in the same light as other carcinomata.

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REPORT OF TWO CASES OF GLYCOGEN STORAGE DISEASE IN TWO MEMBERS OF ONE FAMILY

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"Storage diseases" is the broad term used to designate a group of pathological states in which there is an abnormal deposit in the tissues of various organs, of normal tissue constituents (glycogen, calcium, fat, cholesterol compounds, phosphotides, kerasin, urates, hemosiderin, melanin, bilirubin etc. Some observers classify edema with this group). The fundamental mechanism in these storage phenomina has not been fully explained, but most observers believe that it is a metabolic disturbance. Some observers believe the phenomena is due to abnormal function of the endocrine system. It seems obvious that the abnormal storage of these substances is due to some abnormal physicochemical processes in which the reticulo-endothelial cells play an important role.

In 1929 Von Gierke, first described a pathological condition (since known as Von Gierke's disease), characterized by hepatonephromegaly and cardiomegaly, in which the hypertrophy of the organs is due to an abnormal deposit of glycogen in these organs. This phenomena has been also called "glycogen disease." However, "Glycogen Storage Disease" is much more descriptive and hence a better name for this pathological state.

The disease manifests itself early in infancy or early childhood and is probably of congenital origin. Its chief characteristics are an abnormal deposition of glycogen in the liver, kidney and heart producing marked hypertrophy and also associated with a hyperglycogenemia, a fasting hypoglycemia, spontaneous ketonuria, a tendency to hypercholesterolemia and sometimes lipemia, and an increased diastase content of the urine. Gradually the patients develop a marked secondary anemia of the hypochromic type, severe nutritional disturbances, and most frequently succumb to an intercurrent infection because of lowered resistance within the first year of life.

The two cases described below are reported, first, because this type of pathological state is relatively rare and should be reported for statistical purposes, second, because of the marked similarity of the two cases, involving a brother and a sister, and, third, because the time interval between the birth of the two patients was about nine and a half years. Unfortunately, because of circumstances beyond the control of the writers, certain of the clinical data necessary to establish an unquestionable diagnosis of glycogen storage disease could not be obtained, but the similarity of history and physical findings with definitely established cases makes the diagnosis most probable.

CASE REPORTS

M. B. S. Jr. (a male) was born on October 13th, 1931. The parents were both 25 years of age at the time, were healthy, and had no history of serious illness nor of consanguinity. This was their first child. The labor was only three hours long, the delivery was spontaneous, and except for some difficulty in delivering the shoulders was normal in every respect. The weight at birth was 10 pounds 8 ounces. At the age of four weeks, the mother reported he did not

seem satisfied with the breast feedings. Otherwise, he was well. His weight was 10 pounds 10 ounces, the heart tones were most pronounced immediately under the sternum and the baby "held his breath" once unitl quite cyanosed during the examination. Supplementary feeding of S. M. A. was instituted. At seven weeks the mother reported that the baby was doing well, except somewhat fussy at times, and he had some "colic". His weight was 11 pounds 7 ounces. The heart tones at this time were normal and the baby did not "hold his breath". At 8 weeks of age the child had a slight coryza, associated with one degree of fever, and anorexia which lasted three days. At nine weeks of age the baby was fussy and apparently not getting sufficient food; his stools were irregular. At this time the baby's weight was 11 pounds 6 ounces. Generally, the examination was negative, except that the liver was slightly enlarged. He did not appear to be as alert as formerly, and his tongue tended to protrude slightly. At 11 weeks the baby still was restless and did not sleep as much as normal. The weigh was 11 pounds 12 ounces and the liver was definitely larger, and the edge very hard. Three was a slight hycrocele developing on the right side. The heart was enlarged, but there were no murmurs. Within a few days the mother reported that the child had occasional "sinking spells" in which he suddenly became limp and blue. An x-ray of the chest showed his heart to be three times average size. At 12 weeks the child died suddenly.

A post mortem was permitted, but none of the tissues were to be removed. The thymus gland was normal, the lungs were normal, the heart filled two thirds of the chest cavity, and there was moderate amount of serous fluid in the pericardium. The large vessels leading to and from the heart were apparently normal. The myocardium averaged 7/8 in. thick. There was no valvular abnormality. The liver was enlarged one and a half times, markedly engorged, and the edge sharp and hard. The small bowel was greatly distended to one inch in diameter, while the colon appeared to be "spastic" and about 1/3 inch in diameter. The kidneys appeared slightly "nodular" but not enlarged. The cut surface of the heart, the liver, and the kidneys had a glistening appearance. Microscopic sections were not made. The pathological diagnosis was congenital hypertrophy of the heart with passive congestion of the liver.

C. S., a female was born April 5, 1942, (this was 9½ years after the birth of the first patient and there had been no intervening pregnancies). Labor was terminated by mid-plane forceps after rotation of an acciput posterior position. The infant had a large caput succedaneum but otherwise seemed normal. Birth weight was 8 pounds 13 ounces. The Moro reflex was present and the baby cried when handled. On the second day edema involving both lower extremities was noted. This was associated with slight cyanosis of the toes. During the succeeding few days the edema extended to the hips and appeared in the forearms and then entirely disappeared. There was slight protrusion of the tongue, but no difficulty in nursing. The baby left the hospital on supplementary feeding.

She failed to gain in weight, refused part of her feeding, and vomited some. She seemed less vigorous than the average infant and her cry was weak. From birth respirations seemed rapid and noisy. At 4 weeks of age her weight was 8 pounds 11 ounces. At 5 weeks of age her weight was 9 pounds and 4 ounces and she was very fussy.

At that time the parents moved to another city and the patient was not seen again until July 1, 1942 (age almost 3 months). She weighed 11 pounds 9 ounces at that time. She looked ill and had a dusky, suffused appearance. The skin was soft and of poor turgor. The tongue protruded. Respirations were rapid and shallow. Heart sounds were distant and faint. There was dullness throughout the entire left chest anteriorly and posteriorly; breath sounds were reduced. The liver on the right extended 3 fingers below the costal margin.

Urinalysis showed acid reaction, and negative albumin, sugar, acetone and diacetic acid. There was grade I pus in the urine. The blood count showed hemoglobin to be 78 (sahli), erythrocytes 3,260,000, leukocytes 11,900, polymorphonuclears 38, lymphocytes 58, eosinophiles 3, and basophils 1. Roentgen studies of the chest showed the heart enlarged grade IV, filling three quarters of the left thorax.

A diagnosis of Von Gierkes disease was made. Further clinical study and hospitalizataion were not permitted. The baby failed rapidly, refusing most all of her feedings and died at three and one-half months of age. It was not possible to secure a postmortem.

It is regrettable that the parents would not permit further and more complete study in this case. A fasting blood sugar and opportunity to repeat the tests for acetonuria would have been helpful. The one urine tested may have been obtained after ingestion of a feeding. After ingestion of carbohydrate acetone may temporarily disappear. Clinically both of these infants gave the classical findings of glycogen storage disease. It is of interest that Unshelm (quoted in Brennaman Practice of Pediatrics) in 1932 noted an association of generalized hydrops with glycogenosis.

RESUME

1. Von Gierke's disease is rare and should be reported for statistical purposes.
2. While these cases reported cannot be proven to be cases of Von Gierke's disease, the evidence presented is rather conclusive.

3. It is interesting to note two cases in the same family without any history of consanguinity, nine and one half years apart, with no intervening pregnancies, and with clinical histories and findings so closely paralleling one another.

ACUTE PSYCHOSIS IN SELECTEES

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ELGIN

When Congress authorized the armed forces of the nation to be increased, and set into action the machinery to induct the young men of this country into the army camps, there came about a decided increase in the number of mentally ill patients entering the state hospitals directly from the military service. This was to be expected. A transposition of a portion of the population from civilian life to military camps meant that the patients arrived from camp instead of from home, and not that there was any actual increase in total admissions. Reports from England (Maclay, Guttmann, Pegge, Wittkower, Wright) indicate that during this war there is no appreciable increase in the number of cases entering their institutions for the mentally ill. In the Elgin State Hospital the number of male admissions to the institution during the year 1940 was 944 and in 1941 it was 1005, an increase of 6%. This increase is consistent with the average rate of increase over previous years.[s]

In the five month period from December 1, 1939, to April 30, 1940, when there was little to indicate that the United States would actually be at war, 501 men were admitted to the Elgin State Hospital. From December 1, 1941, to April 30, 1942, there were 412 male admissions. This is the five month period when the actual war was in progress, and represents a decrease of 21%.

On May 1, 1942, 67 cases had been admitted to the Hospital from the camp. Of these, 25 have been permitted to leave the institution. 13 of this 25 fall into the group designated here as Schizophreniforms, or Schizophrenic reaction. 65 of the total 67 patients were diagnosed Dementia Praecox; 2 were diagnosed as belonging to the Manic Depressive group. In these, symptoms of withdrawal, ideas of reference, and dissociation of ideas were present, which colored the picture with Schizophrenic features.

For statistical purposes the diagnosis Dementia Praecox was made in the 65 cases in order to fit the approved classification of the psychoses. It was clearly indicated that 13 cases were Schizophreniform in character, but lacked some features of the so-called true dementia praecox and had, in addition, some symptoms which did not fit into the accepted concept of Dementia Praecox. And so there were two groups or forms recognized in the series. In one, the diagnosis was made of Dementia Praecox with no dissenting opinions among the doctors present. The anamnesis clearly indicated a Schizoid pre-psychotic personality and pointed with increasing certainly to the ultimate Schizophrenic psychosis if subjected to intolerable stress. This group of cases was identical to those coming from the civilian population. The onset of the personality change was relatively slow and insidious, culminating in a behavior that was recognized as pathological by the family. Prior to induction into the army camp these persons were inadequate in their behavior. Commencing in adolescence, their school records became poor, whereas at one time they were good students; eventually they lost all interest and finally left school. They tried to secure jobs but couldn't maintain a satisfactory work record, changing positions frequently, and doing work far below the standards expected of them by their families and associates. They were considered good boys who did not bother with girls, stayed at home and read books and listened to the radio. The army became a means of escape from a difficult environment. In many instances the youth was advised to enlist in the Reserves or the army in the hope that it would make a "man" out of him.

The form of the psychosis was likewise typical of the usual types of Dementia Praecox, with emotional apathy and indifference and bizarre psychotic mental contents, delusions and hallucinations. Most of them progressed to a chronic form, or if they did show signs of a remission,

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Presented before the Physicians Association, Department of Public Welfare, State of Illinois, 102nd Annual Meeting, Illinois State Medical Society, Springfield, May 19, 1942.

it was only partial, with the accompanying scarring of the personality. The prognosis was considered to be not too favorable.

In contrast to this, there were the 13 patients who were diagnosed variously as Schizophrenic, or Schizophrenic Reaction, and in one instance Psychoneurosis with Schizophrenic features. The history of these patients was decidedly different from the former group. The onset was more abrupt, the course of the psychosis was stormy and terminated as quickly as it began. It was of short duration, and the recovery was seemingly complete. The mechanisms involved and the situational factors were usually quite obvious.

In either group, there was no significant difference in the number that were drafted and the number that enlisted voluntarily in the army.

A case in point is John N. who was committed to the Elgin State Hospital, October 9, 1941. His family history is negative for nervous and mental diseases. He completed one year of High School, leaving at the age of 17 to obtain employment. This was in 1934 during the depression. For one year he worked in a lamp factory, and then secured a job as a factory hand, earning from $30.00 to $35.00 a week. He remained at this job until he was drafted into the Army in April, 1941. The father, who gave the history, stated that the patient was never interested in the opposite sex and preferred to associate with his group of boy friends. The patient himself admitted he did not care for the company of girls because "they were only interested in getting married." His personality was described as jolly, happy, and friendly. He was mechanically inclined and was always kept busy doing various sundry automobile repairing for his friends. The patient was in the military service only 12 days when he was admitted to the station hospital for observation for a suspected mental ailment. He expressed ideas of paranoid reference. His face was flushed and his mouth set. He appeared preoccupied, withdrawn, and never associated with the other patients on the ward. During the interviews his attention was difficult to hold. He expressed ideas of influence, feelings of unreality, and auditory hallucinations. An example of his stream of speech is: "When I want to take a shower — there is no way to explain it — the fellows — when I was working in there, there were a dozen carpenters in the place. I could hear a pin drop."

About a month after he was first admitted to the Station Hospital he became acutely disturbed and broke a number of dishes while working in the kitchen. It was apparent that he was disturbed by his hallucinatory experiences.

The patient arrived at Elgin State Hospital in October, 5½ months after the onset of his psychosis. His description as noted by the examining physician was "This patient is a rather wholesome appearing young man who in all his contact since admission here has impressed one as being an essentially normal individual. He smiles pleasantly and is energetic in his movements." The patient states, "When I first went there, I thought it was a swell idea, but the idea of bayonets got me. A person gave a demonstration as to how we should stick it in the person's gut and then rip them from the belly button to the heart. I got a funny feeling in my stomach as though someone had pulled a raw deal on me."

The patient remained at Elgin one month and was discharged as recovered. He was diagnosed Schizophrenia, catatonic.

Psychometric tests done by the Dept. of Psychology reported the following:

Prognosis Rating Scale—Favorable—score minus 13

Hunsicker Nash Personality Scale—Schizophreniform

Humm Wadsworth Scale—Paranoid

Guilford Scale—Social Introvert

His general efficiency was scored as good, performance score was excellent and the test reactions fair plus.

A follow up interview, 3 months after leaving the hospital, indicated continued good adjustment without evidence of psychosis.

Time does not permit a recitation of any more such cases, but this one represents the features which distinguish it from the usual concept of Dementia Praecox.

There was nothing in the histories of any of the cases to indicate the ultimate outcome of a psychotic episode. Invariably it is noted that the school record was good—average; no grades had to be repeated in Grammar School; usually the individual graduated from High School. Sometimes only the second or third year of High School was completed. But in such instances it was noted, with reasonable assurance, that the reason for his leaving school before completing the full course was legitimate. By that is meant the patient had not left school because of lack of interest or failing accomplishments, but because it was necessary to secure employment to assist in financing himself or his family.

The work record was good in all instances. Jobs were held in responsible positions at adequate wages, and this, usually in spite of the so-called lean years of depression. There were no excuses for leaving a place of employment such

as arguments with employers, or inability to get along with fellow workers. They didn't hold jobs like "usher in a theatre," or house to house canvassing of electrical appliances or Real Silk Hosiery salesman. They had factory jobs at $18.00 to $45.00 a week, or were employed on farms with duties that carries responsibilities.

In the history of the social activities, there again is a marked difference between the two groups. Contrary to the true types of Dementia Praecox, most of the cases of Schizophreniform Psychosis had a very satisfactory social life, judging from the usual standards. In school, they took part in the extracurricular activities, were members of fraternities or clubs, attended social functions regularly, played football or basketball, etc. In a few instances, instead of taking part in sports or social functions, they were employed after school, usually to augment the family income or to provide spending money for themselves. One case owned his own delicatessen store which was the only income for his family.

In checking the family history for hereditary influence, no history of nervous or mental diseases was indicated, which might point to possible hereditary tainting.

The sexual histories provide a different picture; with only a few differences between the two groups. In the anamnesis there was little to indicate any abnormal behavior or attitudes. Sometimes masturbation was admittedly known by the informants, sometimes only suspected, in most instances flatly denied. But there is a different story that the patient tells. When satisfactory rapport was established, a wealth of material concerning sexual maladjustment was disclosed. If the patient was evasive or blocked during this portion of the interview he usually gave very little more information when Amytal was administered. However, in all but a few cases, was the information completely unsatisfactory.

Invariably all cases, in both groups, expressed varying amounts of guilt feelings concerning their masturbatory practices. Heterosexual experiences were admitted by some. But, this was common to patients in both groups. There was, however, a significant difference. In the cases of true Dementia Praecox, where heterosexual contact was admitted, it usually was with a prostitute and the patient would very definitely indicate that no pleasure was derived from it, and the experience was limited to only one instance. Sometimes much material was expressed indicating strong guilt in this regard. In contrast, in the Schizophreniform group, many more cases admitted heterosexual experiences and was stated as a matter of fact. A few cases denied it on a basis of morals.

In the Schizophreniform group, latent homosexuality in varying degrees was present in all but two cases. They were overt homosexulas. This conclusion regarding latent homosexuality was based on such material as Paranoid References to their being called derrogatory names with connotations of homosexuality. For example, they believed they were suspected of being "fruit" or "queer." One case was troubled with this hallucinatory experience. In the barracks he heard the soldiers on each side of him asking him to perform fallatio on them. He stated that even at the time he fancied he heard the voices, he knew that both soldiers were sound asleep. Another patient was continuously fearful of undressing before all the other soldiers in the barracks, and yet, before entering the army camp he had, on numerous occasions, gone to the Y.M.C.A. to swim, and such exposure among the others there did not seem to distress him.

Some patients admitted actual homosexual contacts when much younger, either with a brother with whom he slept or mutual masturbation with his playmates. It is recognized that such histories can be elicited in many cases of true Dementia Praecox and is not peculiar to this small group of Schizophrenic Reactions. It is mentioned here to suggest the probable mechanism of sex conflict in the production of the Schizophrenic episode. A conflict in the sexual sphere was in all instances easily elicited.

A subjective rationalization by several of the patients indicates another approach to the study of causes. Although in these cases the evidence of latent homosexuality was present, the patient was able to cope with it and seemingly adjusted well in camp until he participated in war maneuvers. One patient stated he couldn't control his nerves when he heard the terrific noises

of the big guns. This episode marked the onset of his psychotic episode. Another dates the beginning of his nervous breakdown to the time he was on the rifle range and feared that he would be shot.

The onset of the acute psychotic episode occurs very shortly after the draftee arrives in camp. Although it may have been present, there was no evidence of apprehensiveness just prior to induction. In those cases where the homosexual conflict was strong the break occurred almost immediately after arrival in camp, from a few days to a couple of weeks. Some cases delayed a couple of months, but the change occurred with such incidents as related, concerning the war maneuvers.

The symptoms are in all instances alike, generally speaking. There is an acute onset, marked by confusion, bewilderment, auditory hallucinations and paranoid references. Hyperactivity, restlessness, combativeness and irritability are usually present. Stupor and indolence are found in others. But in all instances the recovery is seemingly complete in a very short time. Several of these cases had no evidence of psychotic behavior by the time they reached the hospital. The remainder showed definite signs of recovery within 24 hours after arrival and all of them were entirely free of symptoms within 2 to 10 weeks.

Although there are only 13 cases to represent the series of Schizophrenic Reactions it does not represent the true incidence of this class of psychotic patients. In a recent visit to a camp station it was revealed that the greater majority of soldiers detained in the psychiatric ward recovered completely even before their discharge from service, and were permitted to return home. Duval and Hoffman[9] state that "of the military cases studied, 47% were well enough to be discharged from the hospital in a few months," and further conclude that in such cases the diagnosis of Dementia Praecox is not satisfactory. The diagnosis lies between Dementia Praecox and Hysteria, they say.

Dementia Praecox is not the proper diagnosis in these cases. But, on the other hand, the total break from reality is not the accepted version of psychoneurosis. For purposes of comparison, and for the further purpose of not leaving the impression that this form of psychosis is peculiar to war conditions or even to the male population, and that it is not a new form of psychosis, the author has produced from the files of the Elgin State Hospital old cases, male and female, in which the diagnosis was made of "Dementia Praecox, catatonic excitement, recovered." Without mention here of specific symptoms, suffice it to say that the comparison was identical in all respects, the acute onset, the stormy course, the complete recovery. With further investigation, more such cases in civilian life will be revealed.

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DISCUSSION

F. G. Norbury, M. D. (Jacksonville): Mr. Chairman, Members of the Association: I am grateful for the opportunity to come before you. I am very much interested in Dr. Klow's paper and the material he presented, both from a psychiatric standpoint and from some contact from the military standpoint.

I think the conclusion that he read there at the last and the comparison of his own studies with the work of Duval and Hoffman is the thing that is of importance to all of us, both in civil and in military experience.

In the military cases that he reported, the situation was one where a conflict reaction has occurred that was more than the individual could stand and yet on a study of cases from civilian experience found in the records of the Elgin State Hospital, quite similar experiences were noted. I think that has a good deal of significance.

One other thing that has interested me in this general subject and which has a part in the development of the various conflicts is the combination of some situations that I put together. Some of them you may have undoubtedly read in various articles about things that particularly apply to the young soldier, and I am just going to take a minute or two to read these as I compiled them.

Difficulties likely to cause disturbances;
Separation from family ties;
Submission to new forms of discipline;
Change of daily routine;
A new occupation;

Imposition of many restrictions with little or no opportunities given for expression regarding them;

Enforced association with men of all walks of life;
Lack of privacy;
The change of ideas regarding killing.

Dr. Klow spoke of that in describing a case history and mentioned it often. I think that is very definitely a conflict element.

In what experience I had at the Billings General Hospital and some consultative work with the neuropsychiatric division there, I think the element of conflict that we see so often in the psychogenic disturbances in civil life is the biggest thing, and I think Dr. Klow has done those of us who are interested in neuropsychiatry a real service in pointing out some similarities in military and civilian experiences and in delineating the conditions in this special group of psychiatric disorders arising in military life.

Phyllis Wittman, Ph. D. (Elgin): I am very pleased with this opportunity of discussing Dr. Klow's paper because of my interest in the field of prognosis and functional disorders.

The most interesting and important finding in Dr. Klow's paper, as I see it, is the further corroboration of Langfeldt's hypothesis that schizophrenia, far from being a specific disease entity, is made up of many different types with process schizophrenia or true dementia praecox at one end of the prognosis continuum and the schizophreniforme type at the other end of the scale.

Of the sixty-five patients in Dr. Klow's study that were diagnosed dementia praecox, thirteen or 20% have made an apparently complete recovery. Either these cases are wrongly diagnosed or the concept of schizophrenia in its very broadest implications must be evoked. Certainly the Kraepelinian concept of dementia praecox does not fit this group either as to etiology, onset, psychotic reaction type or prognosis.

Dr. Klow's description of the remaining fifty-three cases, — those who appear to fit the classical picture of schizophrenia, — is also of corroborative import since they appear to verify the diagnostic and prognostic significance of Adolph Meyer's concept of the shut-in personality type.

The only question I have to raise is that as to the validity of the statement that the number of mentally ill patients entering the State Hospitals from military camps does not mean an actual increase in total admissions to the hospital. I think it does. At Elgin we have received sixty-seven young men from Army camps. This group, it must be remembered, is a select group and supposedly the obvious misfits, the psychotic and the potentially psychotic, have been weeded out.

The fact that in this group, apparently selected on the basis of physical fitness and mental stability, a fairly large number break under the tensions or trauma produced by camp life, is very significant.

Also the percentage of typical schizophrenics, — fifty-four out of sixty-seven cases, according to Dr. Klow's figures, — ought to make us question how carefully the selectees are evaluated before being inducted into Army life. Certainly the typical history of these cases, — schizoid personality, limited social interest, lack of sex interest and lack of drive, associated with inadequate economic adjustment, — at once raises the question of a schizophrenic reaction type.

All this, I think, points to the need for an adequate social service history, no matter how obtained, on men being taken into the armed services if a mental examination at the induction board is expected to do more than weed out the grossly psychotic cases.

Charles W. Read, M. D. (Elgin): I have enjoyed Dr. Klow's paper.

I have only one question to raise, and that concerns the interpretation of what is so easily termed homosexual panic. I have heard the phrase used often and always I have my misgivings as to whether we are not considering a phenomenon which accompanies this person's psychosis as an expression of one of his modalities, as we might say.

Whether this peculiar expression in the psychosis is to be considered as the cause for the psychosis, I am not quite satisfied. There is a bit, more or less, of homosexuality in all of us and we know the sexual drive is perhaps the most important one, — one of the most important ones, — that human beings have to deal with, but as Dr. Norbury has expressed it, these inductees have to deal with many difficulties in their adjustment to camp life. Many old conflicts have been revived concerning this and that and the other thing, and the question remains in my mind as to whether the total expression — or maybe only the partial expression — of the psychosis in the betrayal of homosexual perturbations, is the entire cause or merely an incidental phenomenon that should be seriously questioned before we label a mental break as a homosexual panic.

S. D. Klow, M.D. (Elgin): As to Dr. Read's comments, I am not going to argue the point now; it is just a matter of opinion. There are many factors, but I feel that although homosexual panic may not be the precipitating cause, the latent homosexuality may lay a foundation for a reaction that is brought on by these other factors that Dr. Norbury has added.

Dr. Duval, in his paper, has mentioned these other factors and either because our social histories were incomplete or it wasn't looked for particularly, I failed to find it as a very marked factor as a difference between the schizophrenic reaction and the true dementia praecox. There were perhaps even more cases of

broken up families, divorces, separations, deaths, and so on, that seemed to be the underlying cause of dementia praecox in the so-called true dementia praecox.

Dr. Wittman brought up the question that she doubted that there is an actual decrease. I chose two periods (they are only five month periods, I recognize), — one where we are at war and one where there is no indication that we are at war; but I believe that, as some of the writers have indicated, the probable reason for the decrease is that there are many cases of psychosis, and cases who are potentially psychotic because of a basic neurosis. But with actual war, particularly when the non-combatants are combatants, when the civilian population is subjected to bombing, etc., they have something real to worry about instead of something imaginary, and the psychosis may be delayed or even prevented entirely.

Then on the other hand, we have these youngsters coming in to the camps. I am mentioning now, not the thirteen schizophreniformes, but the other group who have an earlier breakdown because they are put in to the stress which perhaps may come on in civilian life at a later age. They would be the persons who come in as dementia praecox, — what we call late dementia praecox or those coming in after the age of thirty. There is more or less a balance of the two which results.

Thank you, S. D. Klow, M.D.

OCCULT BLOOD IN THE STOOL

CHARLES J. DRUECK, M.D.,
CHICAGO

Macroscopic blood in the stool attracts even the patient's attention and sends him hurrying to his doctor. Occult blood found only during the course of a laboratory study of the feces may also be of serious import and may explain a patient's anemia. Even without blood in the stools anemia may develop in various intestinal stenoses and fistulas, diarrhea and dysenteries of all kinds. Ulcerative colitis, amebic dysentery, and the so called "mucous colitis" are all characterized by numerous stools daily which are watery and contain blood, mucus and pus and will produce a most profound hypochromic anemia. Kracke says that the infection of the bowel nor the loss of blood from the colon is adequate to account for the anemic state entirely. He believes that the diseased colon has lost its power to absorb sufficient iron and other products. A great many ulcerative lesions of the digestive tract may cause minute leakage of blood into the feces. Among these may be considered the following.

Pyorrhea Alveolaris: — The etiology of pyorrhea is not pertinent to this discussion but it is recognized that a number of systemic diseases may act as underlying causes to excite the chronic suppurative process in the mouth and this in turn perpetuates the systemic disturbances; among these may be mentioned malnutrition, diabetes, gout, anemia and endocrine dyscrasias.

The specific organism of pyorrhea, if there be one, has not been found. Endameba buccalis, staphylococci and streptococci are frequently found in the pus pockets but are only secondary invaders.

The gums bleed on slight provocation, and each time the teeth are brushed. This blood when swallowed may suffice to make a positive test, and suggest some gastrointestinal disease associated with occult bleeding.

.. *Gastric and Duodenal Ulcer:* — The incidence of frank hemorrhage in disease of the stomach, duodenum and gall bladder though rare is always interesting. In 568 duodenal ulcers reported by Eusterman[1], blood was noted in the stools in 73 (14 per cent), in 249 cases of gastric ulcer blood was found in the stools of 54 cases (22 per cent). In 500 consecutive cases of chronic and subacute appendicitis 8 cases showed blood in the stools, and in 2 of these pus was mixed with the blood; all had more or less intestinal irritation simulating colitis. White and Jankelson[2] reported twelve cases, six of their own, of gall bladder disease in which blood probably from the stomach or duodenum was found.

In cancer of the digestive tract the conditions are quite different. Occult hemorrhage from a cancer comes from the surface of an ulcerated tumor which is enlarging steadily, and here a negative test cannot be expected even after more than six days on a meat-free diet. This explains why about 98 per cent of all cases of cancer of the digestive tract occult blood can be demonstrated. This continuous seepage of blood from the affected area, applies to all mucous membranes. Therefore, the value of the examination of the feces in doubtful cases is self-evident.

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Oozing may also occur from an ulcer in a Meckel's diverticulum, although probably most of these ulcers are peptic. Until obstruction intervenes, the only positive finding in carcinoma of the small intestine is occult blood in the stool. Infestation with the hook-worm likewise causes minute bleeding. Certainly the old teaching should be re-emphasized, to examine the stool for occult blood in all cases of anemia of doubtful origin. The objection to chemical tests has been the difficulty in ruling out anal or oral bleeding. Although meat in the diet is a potential source of error, its importance has probably been unduly stressed.

Symptoms: — The signs of complications of occult bleeding should be anticipated. The sudden loss of a considerable amount of blood by vomiting or in the stool often causes unconsciousness, while a slower hemorrhage of smaller amount manifests itself only by giddiness and weakness. It is often for these latter symptoms that the patient consults the physician, when there is hemorrhage without vomiting and no obvious discoloration of the stool. In all these cases pallor of the face and mucous membranes, subnormal temperature, and a frequent, small pulse are the most prominent signs. At this time there is an associated anemia of hypochromic type and low color index.

Carcinoma of the Rectum: — Mr. J. T. case 63153, age 79 years was in good health until 3 years ago. He began having diarrhea 6 months ago. The onset was insidious. He has had bowel movements as often as every 15 minutes during the day and every hour at night. At present he has frequent movements during the day but only one at night. The stools are diarrheal with much mucus. Perhaps once a month he has noticed blood clots in the stools. His appetite is good.

Blood morphology — R.B.C. 3,800,000
W.B.C. 15,000
Color index .44
Neutrophiles 70
Eosinophiles 7
Lymphocytes 15
Monocytes 8

Gastric contents Hcl-free-6, total-26

Examination: He was very thin and pale, and inclined to doze most of the time. A firm nodular neoplasm obstructed the upper rectum and sigmoid, and allowed only a small passage. There was involuntary defecations and urinations.

Treatment:

1. He was placed on a low residue, but high caloric and high vitamin diet.

2. The bowel was washed each day with 1 quart of 1-20,000 potassium permanganate solution. As the obstruction was relieved the diarrheal incontinence was controlled. Under this care his erythrocytes rose to 4,000,000 and his leukocytes dropped to 9,000. Interesting features of this patient are that though he had a malignant tumor of the rectum which caused chronic obstruction it never became acutely complete; it did not cause sharp hemorrhage; nor did he have pain at any time. He never had anorexia but always enjoyed his food. He died of inanition and aplastic anemia.

Intestinal Parasites: — The action of intestinal parasites cannot be strictly termed bleeding from the bowel though the anemia caused by such infestation of the human digestive tract renders them a cause for search in every complete gastrointestinal study. The intestinal parasites relatively frequent in the temperate climate are the cestodes

Tenia saginata.....common tape worm
Tenia solium.....pork tape worm
Bothroiocephalus latum.....fish tape worm.

The nematodes are

Ascaris lumbricoides
Oxyuris vermicularis — thread worm

Symptoms:

Most patients present themselves to their physician because they have seen segments in the stool, others because of disturbances of the intestinal function such as sharp abdominal pain, fatigue and headache, but in some and especially with infestation with the Bothroiocephalus latum there may be a severe hemolytic anemia, hyperchromic in type, and resembling Addison's disease. After the parasite has been expelled the blood returns to normal.

Any type of infestation with intestinal parasites is likely to be accompanied by a severe degree of anemia; of these, hookworm infestation is one of the most widespread, particularly in the subtropical and temperate regions. They all produce a hypochromic anemia except the fish tapeworm which produces the macrocytic hyperchromic type.

Most of the symptoms of the patient with intestinal parasite infestation are due to the anemia. The pallor, the marked weakness, the excessive fatigue, the loss of appetite, the gastrointestinal and abdominal cramps, are apparently due in a large part to the anemic state. Hemorrhage appears to play a very little part.

It has been thought by some that the worms actually suck blood from the intestinal mucosa. However, it appears more likely that the worm elaborates something that depresses bone marrow function in its capacity to form the hemoglobin molecule. There may be an actual interference with absorption of iron from the intestinal tract.

Pernicious Anemia: — The symptoms of pernicious anemia may be divided into 3 main groups, depending upon whether they are associated with the anemia, the changes in the central nervous system, or those referable to the gastrointestinal system. In a large percentage of patients there are usually manifestations, of varying degree, representing each group. In some patients the conspicuous and persistent symptoms are those associated with the anemia, with only minor evidence of involvement of the nervous and gastrointestinal systems. Others may complain chiefly of neurological symptoms and have slight if any, indication of anemia or gastrointestinal disturbances. It is not commonly noted that the gastrointestinal symptoms are the predominating features of the clinical picture, and occasionally nausea, vomiting and abdominal discomfort constitute the patient's chief complaints. Symptoms associated with the digestive tract, although they may be mild, are probably the most constant of all and occur to some extent in almost every patient with the disease. Attacks of sore tongue are of the greatest importance from a diagnostic standpoint, as this symptom occurs in about 65 per cent of patients. The intensity of this complaint varies widely from a mild "rawness" which causes but slight discomfort, to an involvement which makes eating and drinking difficult. The patients often complain that acid, salty or hot foods greatly aggravate the condition.

One characteristic feature of the glossitis is the tendency to recur at intervals. The condition may be present for several weeks or months and disappear spontaneously for a similar length of time or longer, only to reappear again after a variable period. The glossitis usually occurs with greatest intensity and at more frequent intervals when the anemia is pronounced, but there are important exceptions to this statement. For example, the glossitis may be the inaugural symptom of the disease and occur several years in advance of all other manifestations. When the modern treatment of pernicious anemia is employed, the tongue symptoms usually disappear promptly, but this is not always true, as the blood may return to normal and the glossitis remain as the sole evidence of the disease.

A poor appetite or actual aversion for food is the rule, but at the beginning of a remission, spontaneous or induced, the appetite may become ravenous. Since the patient usually consults the physician during the relapse, anorexia is the commonplace complaint. The appetite is usually impaired as the red cell count falls but not always, an occasional patient may have a severe anemia and have a normal appetite while another may have a normal red cell count and complain of anorexia.

Nausea and vomiting is a complaint in about 50 per cent of the patients. In most instances these symptoms are of a mild nature and occur at infrequent intervals, but they may become prominent initial symptoms, or only when the anemia is severe.

Abdominal distress described as "heaviness" in the upper abdomen, and with the distention of the intestines with gas, is very different than the severe abdominal pain of gall-bladder disease.

Disturbed bowel function is usual. Diarrhea is a prominent symptom in about 33 per cent of patients. In most instances it appears in attacks of several weeks duration, but it is usually of a mild nature. Occasionally, however, it may be the outstanding clinical feature of the disease, which persists for months.

Constipation is a more frequent symptom, it occurs in fully 50 per cent of the patients. This complaint cannot always be attributed to the pernicious anemia as in some instances it has been present for years. In about 50 per cent of the patients there may be alternating attacks of diarrhea and constipation.

The cause of these several gastrointestinal symptoms has been variously though not satisfactorily explained. It has been suggested that among these underlying factors are the anemia; the achlorhydria; a neurogenic lesion associated with the spinal cord changes; infection of the

gall bladder; and an intrinsic, as yet unknown, factor involving the gastrointestinal tract, which may be the fundamental etiological basis of the disease.

In some instances, cancer of the colon may be associated with the blood picture which resembles pernicious anemia. As the age incidence of cancer and pernicious anemia are the same and an achlorhydria may be present in patients with malignant disease, the diagnosis may present some difficulties. X-ray evidence usually differentiates the conditions and the physical examination, proctologic examination, and the test for occult blood in the stools, usually make the diagnosis clear.

Diverticulosis: — Gross bleeding is infrequent in diverticulosis of the colon. When it does occur it is dependent upon ulceration of a diverticular pouch.

Mesenteric Vessel Accident: — Thrombosis of a mesenteric vein or embolism of a mesenteric artery are both comparatively rare. The symptoms are those of acute bowel obstruction combined with the signs of a severe hemorrhage due to the effusion of a large amount of blood into the bowel.

Diarrhea with True Achylia or Hypochlorhydria: — Elsewhere in these pages we shall mention the lack of hydrochloric acid in the stomach contents in anemia associated with colon and rectal disease. There is a type of diarrhea dependent on either a true or possibly inherited absence of normal secretion. In the achlorhydrias of carcinoma, pus, mucus and blood are frequently found in the fasting gastric residuum by gastric analysis.

The diarrheal stools in a patient with the diarrhea of achylia, as a rule, are neither frequent nor fluid, but rather loose and mushy, and may be formed from time to time, depending on the intake of food. The stools are a paler brown than normal and contain neither mucus nor blood. The patient is seldom incapacitated, but complains of lack of physical vigor and is often neurotic (just as in early primary anemia).

58 East Washington Street

MUMPS WITH EDEMA OF THE CHEST

JOSEPH N. RAPPAPORT, M.D.

EVANSTON

Epidemic parotitis with involvement of both parotid glands occurs frequently. Involvement of the submaxillary and sublingual glands either alone or in combination with the parotid glands is occasionally seen. The more common complications which are listed in the standard textbooks include orchitis, meningitis, meningoencephalitis, acute pancreatitis, deafness, nephritis and conjunctivitis. Among the rare complications are listed blindness, endocarditis, pericarditis and pneumonia. However in searching through two standard textbooks and two systems of pediatrics, no description of mumps complicated by edema of the chest wall was found although this complication was mentioned in Abt's System of Pediatrics. In addition no report with such a complication could be found listed in the Quarterly Cumulative Index Medicus during the last ten years. It therefore seemed probable that this must be a rare complication and that a description of two cases which were seen during a period of fourteen months might be of interest. The swelling of the face in each case was typical of mumps and this diagnosis was further substantiated by another case of this disease which developed in each home.

CASE I

James M., age three years, developed mumps on February 21, 1941 with involvement of all the salivary glands . At this time the child seemed quite well except for the swelling of the face . On February 25th, the mother noticed that the anterior aspect of the neck was swollen and by the following day the upper portion of the anterior chest wall was also involved to the level of the third right and fourth left intercostal space. There was a definite edema of the chest wall as shown by a quivering of the skin when this area was tapped lightly with the finger. The skin was not tense and yet there seemed to be a considerable excess of fluid beneath it. The disease ran the usual course of an uncomplicated mumps with the swelling of the salivary glands decreasing first. Only after the swelling of these glands had decreased considerably did the edema of the chest wall diminish and finally disappear on March 6th, 1941. There were no other complications and the child made a complete and perfect recovery. He was not

toxic at any time during the illness and seemed to be no more uncomfortable than any other child with an uncomplicated parotitis. A brother also developed mumps on February 26th, 1941 with all of the salivary glands involved but there was no edema of the chest in this case.

CASE 2

Charles S., aged 5½ years, developed mumps on April 8th, 1942 with all of the salivary glands involved. On April 10th the swelling had extended down the neck and anterior chest wall to the level of the second right and third left intercostal space. The area on the chest presented the same quivering appearance when tapped lightly with the finger as noted in case No. 1. At this time the rectal temperature was 102 degrees. Two days later the swelling of the chest wall had disappeared and the temperature was normal. The swelling of the salivary glands had entirely disappeared by April 14th, 1942. No other complications developed and the child at no time appeared to be toxic. There was complete and perfect recovery. Nineteen days after the onset a sister developed mumps involving only the parotid glands.

It would seem probable that this type of complication may be explained on the basis of a disturbance in the normal flow of lymph from the anterior chest wall and neck. According to Cunningham's Textbook of Anatomy, the superior deep cervical glands receive lymph from the submaxillary, sublingual and parotid glands and drain into the inferior deep cervical glands. The latter also receive lymph from the neck and upper part of the thorax. The flow from the three infected salivary glands on each side might overload the superior group of glands and carry over to the inferior group. This increased load on the latter apparently impedes the flow of lymph from the neck and upper part of the anterior chest wall causing an accumulation of fluid in these regions with subsequent edema as described in the two cases above. As the infection in the salivary glands subsides, the load on the superior and inferior lymph glands is diminished with resumption of normal lymph flow and disappearance of excessive fluid in the neck and chest wall.

2650 Ridge Avenue.

"The first and greatest need is education; education of the people and through them education of the state."—Trudeau

There are one and one-half as many deaths from tuberculosis among men as among women. The preponderance of deaths among men is in the older age groups, the reverse is true among women. Mary Dempsey, Nat'l Tuber. Assn.

SEEK PHYSICIAN VOLUNTEERS FOR SERVICE IN INDUSTRY AND OVER-POPULATED AREAS

A request by the directing board of the Procurement and Assignment Service for physicians over the age of 45 to volunteer for service either in industry or in overpopulated areas is published in *The Journal of the American Medical Association* for December 26. The request follows:

"The directing board of the Procurement and Assignment Service for Physicians, Dentists and Veterinarians wishes immediately the name of any doctor who is willing to be dislocated for service, either in industry or in overpopulated areas, and who has not been declared essential to his present locality. This is necessary if the medical profession is to be able to meet these needs adequately and promptly. Any physician over the age of 45 who wishes to participate in the war effort in this way should send in his name immediately to the state chairman for the Procurement and Assignment Service in his state."

CIVILIAN HEALTH

"National defense calls for the mobilization of all national resources. Fundamentally they may be classified as raw materials, financial resources and man power. More briefly they are the three M's — Materials, Money, and Men, and the greatest of these is men. In fact, the whole structure of national defense depends upon the human element. Since man power is the arch supporting the national defense program, it is good medical engineering to examine the strength of this all-important element.

In terms of national defense, man power means vastly more than soldiers, sailors, and marines. It even goes beyond those who are engaged in the so-called defense industries, and includes any and all who are capable of any kind of productive service. Anything that would add to or detract from the efficiency of the various varieties of man power is of vital importance to national defense. Just as water does not rise above its level so man power is no better than the source from which it is drawn. The source being the civilian population, an inquiry into civilian health and its bearing upon the man power of the nation is of foremost concern."—K. E. Miller, Medical Director, U. S. P. H. S.

★ BUY WAR BONDS ★

Honor Roll

DOCTORS IN SERVICE WHOSE NAMES DID NOT APPEAR ON THE LIST PUBLISHED IN THE JANUARY ISSUE

BY NAME AND COUNTY

Abelson, Sol M., Cook
Addenbrooke, Edward, Cook
Angel, Norman S., Cook
Armstrong, R. B., Winnebago
Axel, Carl, Lee

Baker, Kenneth C., Knox
Barrow, Leonard A., Cook
Becker, John C., Cook
Berardi, James B., Cook
Beresky, Tibor, Cook
Bergstrom, Paul L., DeKalb
Blanck, Earl E., Cook
Blomberg, Thorsten E., Winnebago
Bond, Ian H., Cook
Bratrude, Amos P., Lake
Bridgegroom, High, Cook
Brown, Leo J., Jackson
Bryant, Joe, Cook
Burge, Edward S., Cook

Cahan, Max Z., Lake
Caliendo, Joseph E., Cook
Casciato, John J., Cook
Chrisos, Sam S., Cook
Crawford, Ray F., Cook
Culbertson, Roy F., St. Clair
Czyzewski, John F., Cook

Davis, Jack Raymond, Cook
Denker, Merle J., Cook
DePasquale, Leonardo, Cook
Diamond, Mortimer, Cook
Dicoscola, Ralph M., Cook
Dina, Salvatore, Cook
Dohrmann, George O. F., Cook
Dolan, Martin A., Cook
Dougherty, Roderick J., Cook
Duffy, Joseph E., Will
Dwyer, John J., Cook

Edahl, Edwin W., Effingham
Edison, Earl, Cook
Edwards, Gilbert H., Perry
Edwards, Robert W., Cook
Eisenhardt, Robert C., Cook
Eisenman, Leon S., Cook
Engelbach, Hermann F., Morgan

Falk, Henry, Kankakee
Freeman, John J., Cook
Fried, Julius L., Cook
Friedell, Hymer L., Iroquois
Freser, George J., Cook

Gazda, Mace, Cook
Gburczyk, Frank H., Cook
Gawne, Charles B., Cook
Gaynes, Leonard, Cook
Gench, Raymond L., Sangamon
Geyser, Frederick P., Cook
Gillespie, Barnes
Glaser, William, Cook
Goff, Sydney B., Edgar
Golden, Maurice J., Cook
Greenberg, Mervin W., Cook
Greer, Miller, Fayette
Grendeske, Joseph A., Cook
Grill, Frank T., Cook
Grizzaffi, Anthony L., Cook
Guttman, Joseph R., Cook

Haeberlin, J. B., Jr., Cook
Hammatt, Harold Wayne, Macon
Hanks, Thrist G., Cook
Hartman, Clifford D., Lee
Hartnagel, Grant F., Effingham
Harr, Rasmus J., Cook
Haskins, William V., LaSalle
Hessin, Arthur L., Alexander
Highman, Walter J., Jr., Iroquois
Hoeksema, Henry, Cook
Hoverson, Emil T., Cook
Hunsaker, Curtis A., Williamson
Hurd, Henry H., St. Clair

Ilasi, Frank P., Cook
Irace, Henry E., Cook

Jacobs, William F., Cook
Jana, Edward C., Cook
Jansen, Edward L., Cook

Kaufman, Charles H., Cook
Kaplan, Joseph H., Winnebago
Karay, George N., Cook
Keller, Robert Stephen, DeKalb
Keren, Meyer J., Cook
Kerman, Willard Z., Cook

Kirsch, Ralph, Cook
Klein, Ernest S., Cook
Klein, Thomas, DeWitt
Koziol, Stanislaus M., Cook
Kraines, Samuel H., Cook
Krakov, C. S., Cook
Kroulik, William J., Cook
Krueger, Francis J., Cook
Kullman, Paul J., Cook
Kuman, Stanley J., Cook

Larson, Wilbur M., JoDavies
Law, Otis H., Livingston
Lawrence, James O., Cook
Leavitt, Harry C., Kankakee
LeBlanc, John, Madison
Lee, A. L., Cook
Lenz, Charles, Sangamon
Levin, Aaron S., Cook
Levin, Jack, Randolph
Levitin, Emil D., Cook
Levy, Harry M., Cook
Lodato, Victor, Jr., Cook
Loeppert, William A., Cook
Lucatorto, Vito R., Cook
Lustigman, Herman, Cook
Lyle, Francis M., Grundy
Lynn, Lawrence W., Cook

Macaluso, Leonard A., Cook
Magill, Clark R. W., Cook
Marion, Charles J., Cook
Marino, Joseph D., Cook
Masor, Nathan A., Cook
Matheson, Abe., Cook
May, Martin M., Williamson
Maydet, Simon J., Cook
McDonald, Roderick L., Jo Daviess
McGary, Clarence G., Cook
McPherron, Raymond H., Cook
McVety, Thomas W., Mason
McVey, Emerson K., Cook
Meier, Donald A., Cook
Merto, Michael L., Madison
Meyer, Hershel, Cook
Miller, Nathan H., Cook
Mills, John H., Grundy
Mishkin, Herman L., Cook
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Montgomery, M. M., Cook
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Neims, Irving M., Cook
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Pass, Bernard J., Cook
Pardoll, Davis H., Cook
Patejdl, William, Cook
Pavletic, Nicholas B., Cook
Pawlikowski, Joseph S., Cook
Percy, George L., Cook
Perlow, Samuel, Cook
Pintozzi, C. J., Cook
Plucinski, Stanley J., Cook
Pope, George J., Cook
Poticha, Joseph S., Cook
Probasco, John L., Winnebago
Prickett, F. L., Christian
Purcell, Paul W., Cook

Ramsay, Samuel W., Cook
Rankin, James T., Winnebago
Rasmussen, Richard A., Cook
Ranquist, Robert C., Cook
Ricci, Henry N., Cook
Riley, William J., Lake
Robertson, Thomas S., Cook
Rosi, Alcide L., Cook
Rosi, Peter A., Cook
Rothschild, Robert R., Cook
Rottman, M. M., Cook
Rottschafer, Henry W., Cook

Sanford, Heyworth N., Cook
Sazma, Russell J., Cook
Schiff, George N., Cook
Scholnik, Sol, DeKalb
Schreiber, Adrian L., Boone
Schultz, Adam S., Cook
Schwartz, Bernard, Cook
Schwartz, Max J., Cook
Seaton, Ralph M., Christian
Seltzer, Sam, Cook
Shafer, Roger D., Franklin
Shaffer, William T. J., Cook
Shafton, Arthur L., Cook
Shapiro, Irving J., Cook
Siegert, Frederick W., Christian
Siemsen, Walter J., Jackson
Sitney, Julian J., Cook
Sluzynski, Leonard S., Cook
Smith, Lyman W.,
Spafford, Howard Everett, DeKalb
Spiegel, Manuel, Cook
Stanelle, Wilbur F., Gallatin
Steiner, Matthew M., Cook
Stephens, Jerry H., Marion
Steinberg, Fred B., Cook
Strube, William E., Lake
Sullivan, Donald G., Cook

Tashman, Herbert, Cook
Taylor, John B.
Thomsen, Philip G., Cook
Toman, A. J., Cook
Torczynski, Vincent, Cook
Tosney, Harold J.

Ushkow, M. E., Cook

Verhaag, Joseph E., Cook
Vertuno, John W., Cook
Vincenti, Anthony, P., Cook
Vinnecour, Max I., Cook

Wajay, Louis A., Cook
Wall, John C., Cook
Wallheiser, Laverne M., Cook
Weed, Linton G., Christian
Weihe, Arthur R., Cook
Weimer, James I., Tazewell
Weinberger, Laurence, Cook
Weinman, George J., Cook
Werba, Daniel R., Vermilion
Wexler, Ralph M., Christian
Whaley, John H., Cook
Wicks, Mark, Cook
Willett, Bradford J., Cook
Winskunas, Felix C., Cook
Wittelle, Frank M., Cook

Zanette, Alfred M., Cook
Zencka, Edward A., Cook
Zimmerman, Harold W., Cook
Ziobrowski, Frank G., Cook

Corrections and additions to our Honor Roll will be appreciated. Send them to Dr. Harold M. Camp, Secretary, Monmouth, Illinois.

Clinicopathologic Conferences

J. J. Moore, M.D., Department Editor.

PRESENTATION OF CASES BY
CARL W. APFELBACH, M.D.

Presbyterian Hospital
CHICAGO

CASE 1 — MACROCYTIC ANEMIA AND ACUTE PULMONARY TUBERCULOSIS

This 69 year old white male was admitted to the hospital for the first time on 8/1/42 at which time his only complaints were constipation and hemorrhoids. He had the latter for thirty-five years but recently they had begun to bleed and cause pain.

Further questioning disclosed that he had moderate dyspnoea on exertion, expectoration of yellow, purulent fluid, night sweats for two weeks, edema of the ankles for one month, decreased ability to coordinate muscular movements, noticed when the patient was dressing himself, and liquid black-brown stools.

Physical examination revealed a moderately emaciated, senile, white male. BP 87/46, temperature 100.0°, and there was marked pallor of the mucous membranes and the skin was lemon yellow. The pupils reacted to light and accommodation. The chest had an emphysematous configuration. A systolic apical murmur was transmitted to the axilla. The spleen was easily palpable. The hemorrhoids were prolapsed. There was mild anasarca of the ankles. The tendon reflexes had a diminished response except the radial and patellar which were absent. There was no Babinski sign.

The hemoglobin was 5 Gm.; r.b.c. 630,000; color index 2:48; and w.b.c. 2,150. Poikilocytosis and anisocytosis were observed, in addition to a large number of macrocytes. Serum albumin was present in the urine; BMR was minus 4; sternal puncture disclosed a large number of megaloblasts; and achylia was present.

On administration of liver, the reticulocytes increased from 1.5 per cent to 48 per cent in one week. It was noted at this time that there was a marked discrepancy between the degree of anemia and emaciation, as usually observed in pernicious anemia. Examination of the chest on admission demonstrated moderate enlargement of the heart in the region of the left ventricle but no other changes. The sputum cultured on admission demonstrated type XVII pneumococcus, staphylococcus aureus and streptococcus viridans. The patient had daily fever of septic type which on one occasion reached 105.0° F. The usual blood agglutination tests for typhoid and undulant fever were negative.

At the end of ten days there was extensive mottling of both lung fields, particularly in the upper portions. At this time no acid fast bacilli were found in the sputum. Five weeks after admission to the hospital, another X-ray film of the chest demonstrated a miliary type of density involving both lungs, more marked in the upper lobes.

Fluoroscopic examination of the stomach and colon was negative. At this time it was believed that the patient might have an abdominal neoplasm with metastases to the lungs. Diagnosis before death was carcinoma metastases of the lungs with the primary tumor probably in

the left upper quadrant of the abdomen; pernicious anemia and subacute combined degeneration of the cord.

During the hospital stay the erythrocytes never rose above 2,200,000 and the leukocytes retained a normal level.

Autopsy — The body was that of an elderly, white male weighing 40 kg. and measuring 164 cm. There was slight edema of the ankles. The skin in general was pigmented pale yellow-brown. The antero-posterior diameter of the thorax was increased. The abdomen was scaphoid.

The subcutaneous fat was sparse. There were 600 cc. of clear, watery fluid in the abdominal cavity. The loops of small bowel and colon were collapsed. The spleen was only slightly enlarged, but was pushed inferiorly by a retroperitoneal mass which later turned out to be a large, solitary cyst of the upper pole of the left kidney (see Fig. 1).

Figure 1 — Solitary cyst of the left kidney.

When the thorax was opened the lungs were enlarged due to over-distention with air. In each pleural cavity there were about 50 cc. of slightly turbid, yellow fluid. There were disseminated fibrous adhesions in both pleural cavities, particularly near the apices. The pericardial fluid was clear and rigor mortis was firm in the left ventricle.

The lungs together weighed 1790 Gm. Throughout all lobes minute nodules were palpable which when cut into were found to consist of caseous material. The majority of these were 1 to 2 mm. in diameter. In the apex of the left upper lobe there was a group of confluent cavities, the entire mass only 6 cm. in diameter. The walls of the cavities were composed of caseous material only. In only a few of the tracheobronchial lymph nodes were there soft, caseous masses. No regions of calcification were observed.

The lining of the stomach was smooth and the entire wall thin, even though the stomach was not dilated.

The marrow in the cancellous portion of the lumbar vertebra and in the cavity of the shaft of the right femur was red.

Histology — In sections of marrow from the femur approximately 70 per cent of the tissue was myeloid tissue and 30 per cent adipose tissue. Eosinophilic myelocytes were numerous, whereas neutrophilic polymorphonuclear leukocytes were sparse. Megacaryocytes averaged one to two per high power field (x400). Mature erythrocytes were numerous but megaloblasts and macroblasts were found only occasionally. Acute caseous tubercles were present.

In sections of liver, spleen and lymph nodes from various portions of the trunk there were acute caseous tubercles.

In sections of the spleen there were small regions of hematopoiesis.

Numerous sections were made of the two lungs, and all the tuberculous regions were of a recent date, characterized chiefly by necrosis and sparse proliferation of epithelioid cells at the margins. Multinucleated giant cells were sparse.

In sections of myocardium there were occasional regions of necrosis of muscle bundles and exudate consisting of macrophages and lymphocytes.

In sections of both adrenal glands there were occasional tubercles.

In sections of the spinal cord there was no significant decrease in myelin content. In some of the ganglion cells, yellow-brown pigment was observed in the cytoplasm and occasional lymphocytic infiltrations near arteries.

In sections of the genital organs there was no evidence of tuberculosis.

Comment—From the clinical standpoint there are two unusual features. The spleen was made palpable not by enlargement of the organ but by being displaced by a cyst of the kidney, which

had nothing to do with the essential disease. Furthermore, the macrocytic anemia, leukopenia, achylia and paresthesias suggested pernicious anemia even though the degree of emaciation was out of proportion to that usually observed. The sudden appearance of disseminated regions of density in the lung, together with emaciation and the palpable spleen in the left upper quadrant suggested neoplasm rather than tuberculosis, which is usually considered to be relatively rare in old people from a clinical standpoint but which is known to be fairly common in elderly people from postmortem experiences. Another interesting feature of this disease from the anatomical standpoint has to do with the development of a fulminating pulmonary tuberculosis and generalized military tuberculosis in a person having one of the blood dyscrasias. It has been our experience that among the most rapidly developing forms of tuberculosis are observed in such diseases as leukemia and splenomegalic cirrhosis.

CASE 2 — RETICULUM CELL SARCOMA

The patient was a 69 year old white man who came to the Presbyterian Hospital on 3/15/42. He had been quite well up until six months before admission, except for abdominal distress that had been interpreted as due to a spastic bowel. The abdominal distress increased, to be followed by constipation, interrupted by short periods of diarrhea. Investigation of symptons from other organs, and the past and familial histories, were essentially negative.

The physical examination at this time demonstrated a slightly tender mass in the left lower quadrant. Colon and gastric fluoroscopies and intravenous pyelograms were negative. Endamoeba histolytica were found and the patient was treated for amebiasis.

A few months later he developed a severe pain in the abdomen radiating towards the left side, and also a precordial pain which came on toward the end of the day and which occasionally radiated toward the shoulder blades. A large, hard, firm mass was palpated in the left upper quadrant which moved with respiration and was interpreted as a large spleen. Blood Kahn test was negative. Colon, chest and gastric fluoroscopic examinations were normal. Serological examinations for typhoid, paratyphoid and undulant fever were negative. Blood cultures were negative. There were no other palpable masses anywhere in the trunk or lymph node regions. During the last fifteen days of the hospital admission he developed intermittent fever, reaching peaks of 102.0° F. edema of the back of the trunk and lower extremities and a gastric hemorrhage. He died on 8/28/42.

Examination of the blood at various times during illness revealed nothing except a slight secondary anemia, a white cell count of 5,000 to 6,000 and a slight decrease in the granulocytic leukocytes.

The anatomic diagnosis was: reticulum-cell sarcoma of the periaortic and peripancreatic lymph nodes, spleen, left adrenal gland, liver, diaphragm, and small intestine and rectum, lungs, renal pelvis, prostate gland, seminal vesicles, testes and thyroid gland; chylous ascites and bilateral hydrothorax; compression atelectasis of the lungs; slight anasarca of the lower extremities; acute mucopurulent tracheitis and bronchitis.

Autopsy — The body was that of a white male weighing 71 kg. and measuring 171 cm. in length. There was moderate emaciation as demonstrated by the flabbiness of the muscles of the extremities. The abdomen was distended. There was slight edema of the ankles and feet.

There were 1800 cc. of gray-pink, opalescent, watery fluid in the peritoneal cavity. The liver was displaced to the right by an enlarged spleen which weighed slightly more than 1700 Gm. The capsule was opaque and thickened and the surfaces made in all portions revealed approximately 60 to 70 per cent of each surface to be made up of small gray-yellow and gray masses varying from 2 to 20 mm. in dia., the small ones predominating. Between the evenly disseminated masses, the pulp of the spleen was pale red-tan. (See Figure 2). Surrounding the tail of the pancreas and extending into the hilum of the spleen there were enlarged, gray-pink lymph nodes, most of them tightly adherent to each other and many of them separated from each other by similar, homogeneous gray to gray-red, translucent neoplastic tissue. The

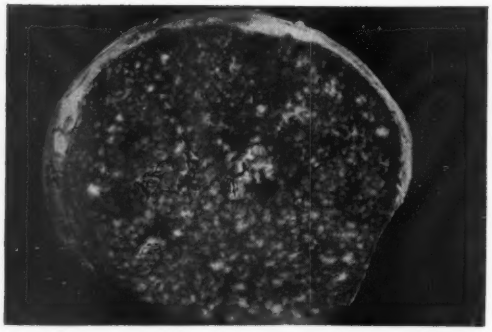

Figure 2 — Metastases of reticulum-cell sarcoma of the spleen.

distal third of the pancreatic tissue was largely obliterated by the growth of the neoplastic tissue between the individual lobules. The large lymph nodes about the pancreas were continuous with similar enlargements in the periaortic, gastro-hepatic and mesenteric lymph nodes, forming a mass about the aorta 7 to 10 cm. in dia. Similiar alterations were present in the iliac and mediastinal lymph nodes but here they were not as large as about the pancreatic region.

The infiltrations in the wall of the bowel were linear and confined to small patches in the submucosa.

Histology — The histological pattern of the neoplasm was similar in most of the lymph nodes and was characterized by dense reticulum, demonstrated in the Foot modification of Bielschowsky stain, by predominance of large cells with irregular borders for their cytoplasm, and by others which assumed a rounded, distinct boundary suggesting their relationship to macrophages.

Comment — The distribution of the lymphosarcomatous tissue was unusual from a clinical standpoint inasmuch as the only palpable mass was an enlarged spleen. Usually in this disease the palpable enlargements are confined to the cervical, axillary and inguinal lymph nodes and usually the enlargement of the spleen is inconspicuous.

As in Case 1, the palpable spleen directed clinical attention toward the more common splenomegalic diseases. In the first one the spleen was not enlarged but merely pushed inferiorly by a large, solitary cyst of the kidney, whereas, in the second case the enlargement was due to a very extensive infiltration of the spleen by the sarcoma, which is unusual in reticulum-cell lymphosarcoma.

Industrial health and tuberculosis in industry are topics of great concern to all nations at war. Britain, the senior partner of the United Nations by length of service, was confronted much earlier than we were by problems arising from the conversion of peace economy to war production. The following are from recent British publications:

Information about tuberculous disease or previous treatment at a sanatorium or dispensary should be made compulsory for all persons entering industry. This is the practice at military boards and there appears no legitimate reason why this should not be incorporated into the civilian industrial life of the country. Such a measure would ensure the control of infection in the interests of the health of the community. Naturally, such a course will occasion opposition. It will be argued that this represents an encroachment on the freedom of the individual; however, freedom would be an intolerable institution if it permitted an individual indiscriminately to infect with disease his fellow creatures. Bertram Mann, Tubercle, March, 1942.

Factors underlying the increasing incidence of tuberculosis are: the background of mental tension and anxiety due to the war which affects the population as a whole, — overwork, often associated with unaccustomed heavy work, with long hours —, usually with additional voluntary duties — resulting in marked fatigue, the increased exposure to infection from the large numbers absorbed in industry, — the overcrowding now prevailing, which must be regarded as an important factor in the spread of disease, especially when associated with "blackout" conditions and the lowered standard of nutrition associated with a restricted dietary. Sidney Deaner, Chief Tuberculosis Officer, Worcestershire County, England. Jour. Royal Inst. Pub. Health and Hyg., Oct., 1942.

Tuberculosis is coming to be regarded more and more as a disease of economics. Editorial, Tubercle, March 21, 1942.

BUY MORE
WAR BONDS
IN 1943

News of the State

PERSONALS · COMING EVENTS · MARRIAGES · DEATHS

Alexander Brunschwig of the University of Chicago addressed the DuPage County Medical Society, January 20th, at the Elmhurst Community Hospital, subject "The Surgery of Carcinoma of the Pancreas."

Considerable interest was shown in the booth set up by the Chicago branch of the Medical and Surgical Relief Committee of American at the 11th annual convention of the American Academy of Orthopaedic Surgeons held at the Palmer House the last of January. The work of distributing Committee literature and the sale of Committee emblems is being handled by Doctor Bertha L. Isaacs, Chairman of the Chicago women's group with the assistance of Doctors Beulah Cushman, Margaret Austin, Marie Ortmayer and Dorothy Osterban. Funds obtained through the sale of the emblems will be used directly for the purchase of medical and surgical supplies for America's armed forces, and for first aid posts, needy hospitals, and other recognized relief agencies in the United States, Alaska and allied nations.

The following Chicago physicians are affiliated with the Committees, Bertha L. Isaacs, Beulah Cushman, Carroll Birch, Warren H. Cole, Morris Fishbein, Harry S. Gradle, B. C. H. Harvey, Oscar Hawkinson, Malcolm T. MacEachern, Dallas B. Phemister and Sidney A. Portis.

BIRTH AND HEALTH RECORD BOOKLET

The Division of Maternal and Child Hygiene of the Illinois Department of Public Health has prepared for experimental use in the home, 1,000 copies of an attractive and sturdily bound 3" x 5" *Birth and Health Record* booklet, designed to afford the family a convenient means of recording such important data about a child as the date and place of its birth, and notations on its physical development, its immunizations, and its medical history. Interested local health officers may obtain further information about this undertaking, on request, from the Springfield offices of the Illinois Department of Public Health.

CANCER ADVISORY BOARD APPOINTMENTS

Governor Dwight H. Green has recently announced his appointment of the following physicians to start new terms as members of the Advisory Board to the Division of Cancer Control in the State Department of Public Health: Dr. William Cooley of Peoria, Dr. F. Flinn of Decatur, Dr. Edwin F. Hirsch of Chicago, Dr. James P. Simonds of Chicago, and Dr. James S. Templeton of Pinckneyville. Unexpired terms are those of Dr. R. T. Pettit of Ottawa and Dr. J. A. Wolfer of Chicago.

Appointed in accordance with the requirements of the 1939 cancer control law, this Board serves in an advisory capacity to Dr. R. V. Brokaw, Chief of the Division of Cancer Control.

GREENE COUNTY MEDICAL SOCIETY

Minutes of a meeting of the Greene County Medical Society held in Carrollton January 8, 1943.

After a dinner at the East Side Cafe, the meeting then adjourned to the residence of Dr. A. K. Baldwin.

In the absence of the President and Vice President the meeting was called to order by the Secretary.

Dr. J. J. Sievers of the State Department of Public Health was introduced and spoke on "The Newer Treatments of Pneumonia." Moving pictures showing laboratory and other procedures were shown.

The lecture and the pictures were interesting and instructive. Note was made that since the more general use of the sulfa group of drugs has developed, the use of serum has dropped about 50%. The death rate from pneumonia has dropped to about 8% under the use of the sulfa drugs, and to a slightly less percent under both serum and the sulfa group.

Those present were, Drs. A. K. Baldwin and D. R. Martin of Carrollton. Dr. C. O. Bulger of Greenfield. Dr. C. A. Billings of Hillview. Drs. W. H. Garrison, F. N. McLaren, W. T. Stickley and R. W. Piper of White Hall.

The guest speaker was Dr. J. J. Sievers of Springfield, Ill.

W. H. Garrison, Secretary.

SPECIAL MEETING

The Chicago Ophthalmological Society at the request of the National Research Council will hold a special meeting in Chicago on Friday evening, February 19th, at the Medinah Club, 505 N. Michigan Ave.

Dinner will be served at 6:00 P. M. and the program will start at 7:30.

The vital question of EPIDEMIC KERATO-CONJUNCTIVITIS will be presented by Dr. Murray Sanders, Assistant Professor of Bacteriology at Columbia University, New York.

At the request of The Surgeon General, U. S. Army, Doctor Sanders is now engaged in a tour of the U.S.A. for the purpose of arousing the Ophthalmologists and the Industrial Surgeons to the dangers of the existing epidemic. The discussion of the topic will deal with the clinical aspects, the epidemiology, and the treatment of the disease, illustrated by Kodachrome films.

The meeting is open to all physicians. Ophthalmologists and Industrial Surgeons of the state are particularly urged to attend. L. G. Hoffman of Chicago is President and Vernon M. Leech of Chicago is Secretary.

Pliny R. Blodgett is the Republican candidate for Mayor of the city of Chicago Heights.

Dr. and Mrs. Morris Fishbein sent a generous contribution to The Chicago Heart Association Memorial Fund Founded in Memory of Morris Fishbein, Jr., in memory of Doris Holt Camp, wife of Doctor Harold M. Camp. The Fund is giving a gift of $1500 to the LaRabida Jackson Park Sanitarium to carry it through a difficult period.

This Fund was founded at the suggestion of Dr. and Mrs. Walter W. Hamburger in memory of Morris Fishbein, Jr., whose sad death occurred as a result of rheumatic fever on April 9, 1929. The original proposal designated that the Fund be administered by a committee of five trustees, and when a minimum of $25,000 had been accumulated, the income thereof would be devoted to research in problems of heart disease.

Dr. Rowine M. Hayes is now doing work at Children's Memorial Hospital under Dr. Stanley Gibson as a Fellow of The Chicago Heart Association Memorial Fund Founded in Memory of Morris Fishbein, Jr. The Trustees of this Fund are: Doctors James B. Herrick, Robert B. Preble, N. C. Gilbert, Stanley Gibson and Morris Fishbein.

COMING MEETINGS

February 10 — Post-Graduate Conference — Faust Hotel, Rockford, 12:30-8:00 for all doctors in Northern section of Illinois.

February 11 — LaSalle-Bureau County Medical Societies — Kaskaskia Hotel, LaSalle, 6:30 P. M. — G. Henry Mundt, M.D. — "Disease of the Ear, Nose & Throat."

February 12 — Will-Grundy County Medical Society — Louis Joliet Hotel, Joliet — 12:00 noon

February 12 — Jersey-Green County Medical Societies — White Hall — 6:30 P. M.

February 17 — Stephenson County Medical Society — Freeport — Evening

February 17 — DuPage Medical Society — Elmhurst Community Hospital, Elmhurst, 6:30 P. M. — Paul S. Rhoads, M.D., "The Virus Pneumonias"

February 18 — Marion County Medical Society

— St. Mary's Hospital, Centralia, 8:00 P. M.

February 18 — Livingston County Medical Society — Pontiac — Isaac A. Abt, Pediatrics subject

February 19 — Will-Grundy County Medical Society, Noon, Louis Joliet Hotel, Joliet

February 25 — Henry County Medical Society — Kewanee, Dinner 6:00 P. M.

February 26 — Will-Grundy County Medical Society — Noon, Louis Joliet Hotel, Joliet

March 5 — Will-Grundy County Medical Society — same as above

March 9 — Kankakee County Medical Society — Noon, Kankakee

March 12 — Jersey-Green County Medical Society — Carrollton, Evening

MARRIAGES

GLENN CLARENCE WOLF, Naperville, Ill., to Miss Marianne Simonson of Dayton, Ohio, in Chicago, September 30.

FRANCIS X. MARINO, Springfield, Ill., to Miss Margery Bond in New Orleans, August 17.

JOHN B. BIRCH, Maywood, Ill., to Miss Gladys Risley of Onarga at Watseka in September.

DEATHS

CHARLES L. ABNER, Chicago; Bennett Medical College, 1913. Practicing physician on Chicago's south side for 40 years. Died January 10, 1943 at the age of 75 years.

JAMES S. CLELAND, Chicago; Missouri Medical College, St. Louis, 1898; aged 64; died, November 15, in Veterans Administration Facility, Hines, of coronary heart disease and angina pectoris.

CHARLES P. COOPER, Chicago; Bennett Medical College, 1906. Had practiced medicine in Chicago for 37 years. Died following a stroke on January 12, 1943 at the age of 60.

LAMBROS G. DIAMESSIS, Chicago; National University of Athens School of Medicine, 1904. Practiced medicine in Chicago for 40 years. Died January 14, 1943 at the age of 64.

JOSEPH FRANCIS DUANE, Peoria; Rush Medical College, 1903. Graduate work in Vienna. Ophthamologist in Peoria for many years. Died January 21, 1943 at the age of 62.

HERBERT H. FROTHINGHAM, formerly of Chicago; Northwestern University Medical School, 1885. Former member of faculty of Northwestern University Medical School. Died January 7, 1943 in Long Beach, California at the age of 80 years.

JOHN NELSON GOLTRA, Evanston; College of Physicians and Surgeons, New York, 1887. Had practiced at Buffalo, N. Y. and served in the Spanish-American War. Author of several books on medicine. Died January 15, 1943, aged 83 years.

THOMAS EDWARD GRIFFITHS, Chicago; Chicago Medical School, 1921. Head of the medical department of the 31st Street plant of Armour & Co. Member of the Scottish Highlanders in World War No. 1. Died January 6, 1943, aged 57 years.

URBAN B. HARRIS, Evanston; University of Illinois College of Medicine, 1914. Member of the staff of Martha Washington Hospital. Captain in World War 1. Died January 24, 1943 at the age of 51.

MAURICE KAHN, Chicago; Baltimore University Medical School, 1903. Had practiced medicine in Chicago for many years. Died December 8, 1943 at the age of 66 years.

ELMER OSBORN LAUGHLIN, Paris; Medical College of Ohio, Cincinnati, 1893. Physician and surgeon for Paris for 49 years. Surgeon for the Pennsylvania Railroad for 35 years. Charter member of the Midland Authors Society, B. P. O. E. No. 812, Paris Lodge No. 268, A. F. & A. M. Modern Woodman, Edgar County Medical Society and Aesculapian Society of Wabash County. He died December 14, 1942 at the age of 75.

ERMIN A. PAULTER, Red Bud; St. Louis University School of Medicine, 1926. Died of a heart ailment January 3, 1943 at the age of 41 years.

COL. P. J. SARMA, Chicago; Hahnemann Medical College, 1916; graduate work in Vienna and Paris. Was associate professor of surgery at the University of Illinois College of Medicine and attending surgeon at Ravenswood and Cook County Hospitals. During World War 1 he was a surgeon in the medical corps and remained a reserve officer until called to active duty in 1941. Was chief of the surgical section at Camp Barkley, Abilene, Texas. Died of a heart attack January 21, 1943 at the age of 49 years.

CHARLES E. SCHARF, Chicago; Chicago College of Medicine and Surgery, 1913. One of the founders of the Belmont Hospital 15 years ago and president of the institution when he died. Died January 25, 1943 at the age of 58 years.

LT. COL. JOSEPH LEWIS STETTAUER, Chicago; University of Illinois College of Physicians and Surgeons, 1901. Intern Rotunda Hospital, Dublin, Ireland; member of staffs of St. Luke's and Jackson Park Hospitals. He joined the Illinois National Guard 23 years ago as captain of the 108th medical regiment of the 33rd division. For a time was divisional medical inspector at Camp Forrest, Tennessee. At the time of death was commandant of the aviation cadet board at Winston-Salem, N. C. Died at St. Luke's Hospital January 3, 1943 while home on leave. Aged 60 years.

P. R. N.

The Jocular Jingles of C. G. F.

by

Charles G. Farnum M. D.

Peoria, Ill.

FEBRUARY

This month with fangs of winter we compete,
That gnaw into our vitals and defile,
They tear huge hunks from dispositions sweet
And what remains is vinegar and bile.
The days grow longer but the cold grows worse,
With aching backs we shovel snow and coal,
The falling snow-flakes make us writhe and curse,
The ground-hog then appears to vex our soul.
With Washington and Lincoln birthdays here
We have two holidays we cannot use,
Come these in June we'd golf and swim and cheer —
No fault of theirs of course, they could not choose.
The month is short, they did omit some days —
They could omit the rest and win my praise.

ME AND ROBINSON CRUSOE

I'm stranded on a dreary, lonesome island,
An island that is called Restricted-Diet;
A clever dietitian
Put me in this position,
And scared me into willingness to try it.

On every side I view the boundless sea,
A sea that bears the name of Must-Not-Take;
'Tis filled with foods desirous
And drinks that might inspire us,
Which I was weak enough to quite forsake.

The city where I dwell in Self-Denial,
Made up of good sea-faring folks like me,
Who scan the sea with sadness,
Out-lying isles with madness,
And sadly dream of days they sent at sea.

This island is an awful place to live,
There's nothing one desires that it provides,
And all the sea's attraction
But breeds dissatisfaction,
When hunger pains are gnawing one's insides.

I feel my courage slowly oozing out,
This cannot last forever, you'll agree,
Some day in desperation
I'll leave this desolation,
And boldly plunge myself into the sea.

WORKERS

When you work upon committees
For societies or cities,
You will find a very few do all the work,
While the others do the talking,
And are critical or balking,
And the vast majority just loaf or shirk.

So I hand a wreath of laurel
To the man who does not quarrel
With the job he finds assigned to him to do,
Who will work on his committee
with no long and loud self pity —
When he says he'll do a thing he sees it through.

Professor Paresis asserts that a fall of snow is much like a state of inebriation — something very pleasant while coming but something awful while going.

IMPROVED PERIPHERAL VASCULAR TREATMENT INTRODUCED BY SEARLE

A distinct advance in the therapy of peripheral vascular disease has been made with the introduction to the medical profession of Tetrathione (Searle).

Developed in the Research Laboratories of G. D. Searle & Co., Tetrathione (Searle) has received five years of intensive clinical investigation by Theis and others, demonstrating its exceptional value in the management of certain peripheral circulatory diseases characterized by deficient oxygenation of the blood and tissues.

An extensive bibliography reports the results of the administration of more than 8000 injections of Tetrathione (Searle). Most prominent among the indications for Tetrathions (Searle) are Buerger's disease (thrombangiitis oblitereans), Raynaud's disease and scleroderma.

The action of Tetrathione (Searle) is that of increasing the oxygen capacity and oxygen content of the blood. This inorganic sulfur compound (Sodium Tetrathionate) has the advantage over sodium thiosulphate in that it has a greater and more prolonged effect.

In addition to thromboangiitis obliterans (Buerger's disease) and Raynaud's disease, Tetrathione (Searle) is indicated in peripheral circulatory disorders such as essential hypertension and metallic poisoning.

It is supplied in powdered form in 0.6 Gm. ampuls — packages of 6, 25, and 100. A descriptive brochure is available on request.

There is eighty times as much tuberculosis found in discharged sanatorium patients as in the unselected population, it is estimated, and thirty times more tuberculosis in the contact group than the general population. L. M. Morse, M.D., Wis. Med. Jour., Mar., 1941.

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